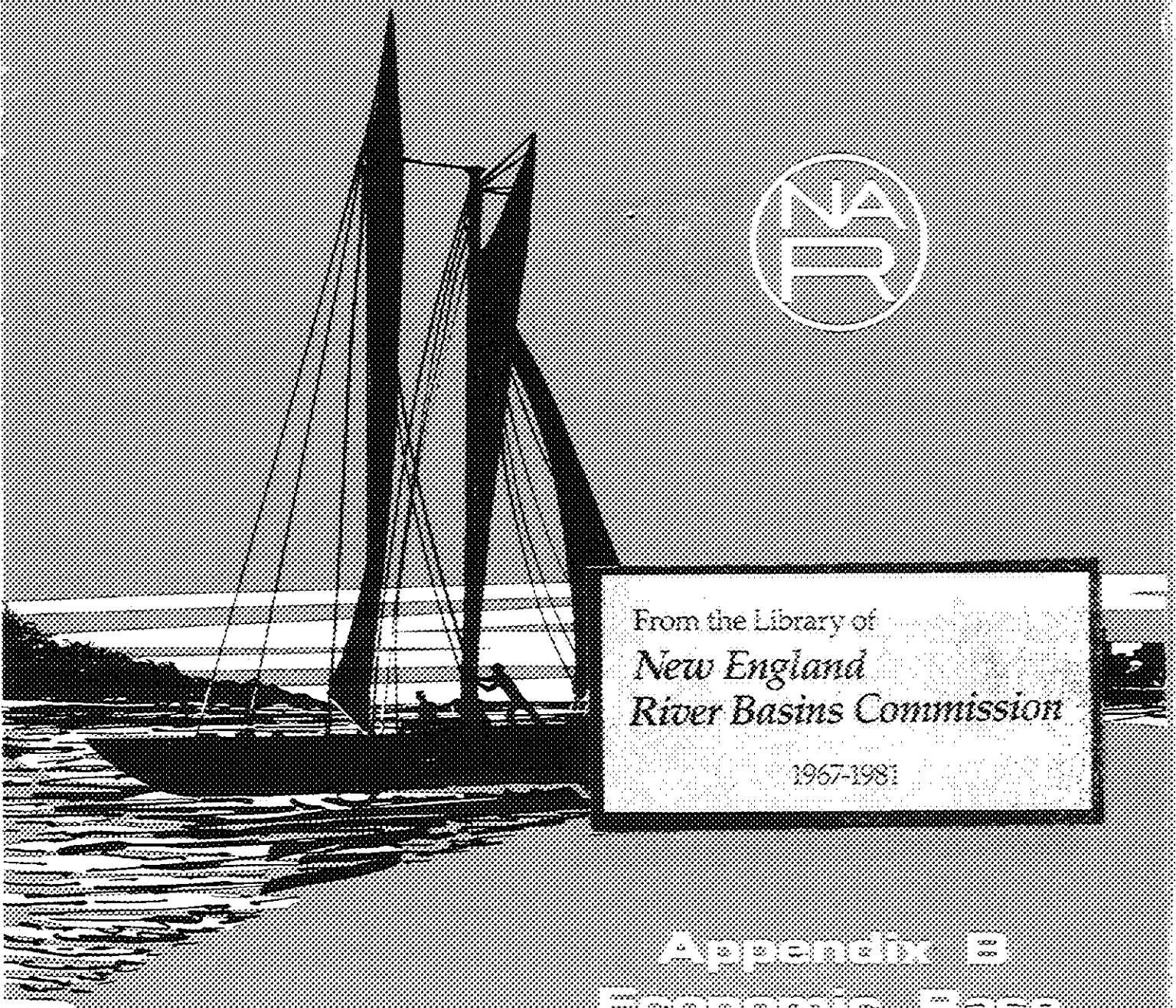
North Atlantic Regional Water Resources Study



Appendix B
Economic Base

NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY COORDINATING COMMITTEE
MAY 1972

The North Atlantic Regional Water Resources (NAR) Study examined a wide variety of water and related land resources, needs and devices in formulating a broad, coordinated program to guide future resource development and management in the North Atlantic Region. The Study was authorized by the 1965 Water Resources Planning Act (PL 89-80) and the 1965 Flood Control Act (PL 89-298), and carried out under guidelines set by the Water Resources Council.

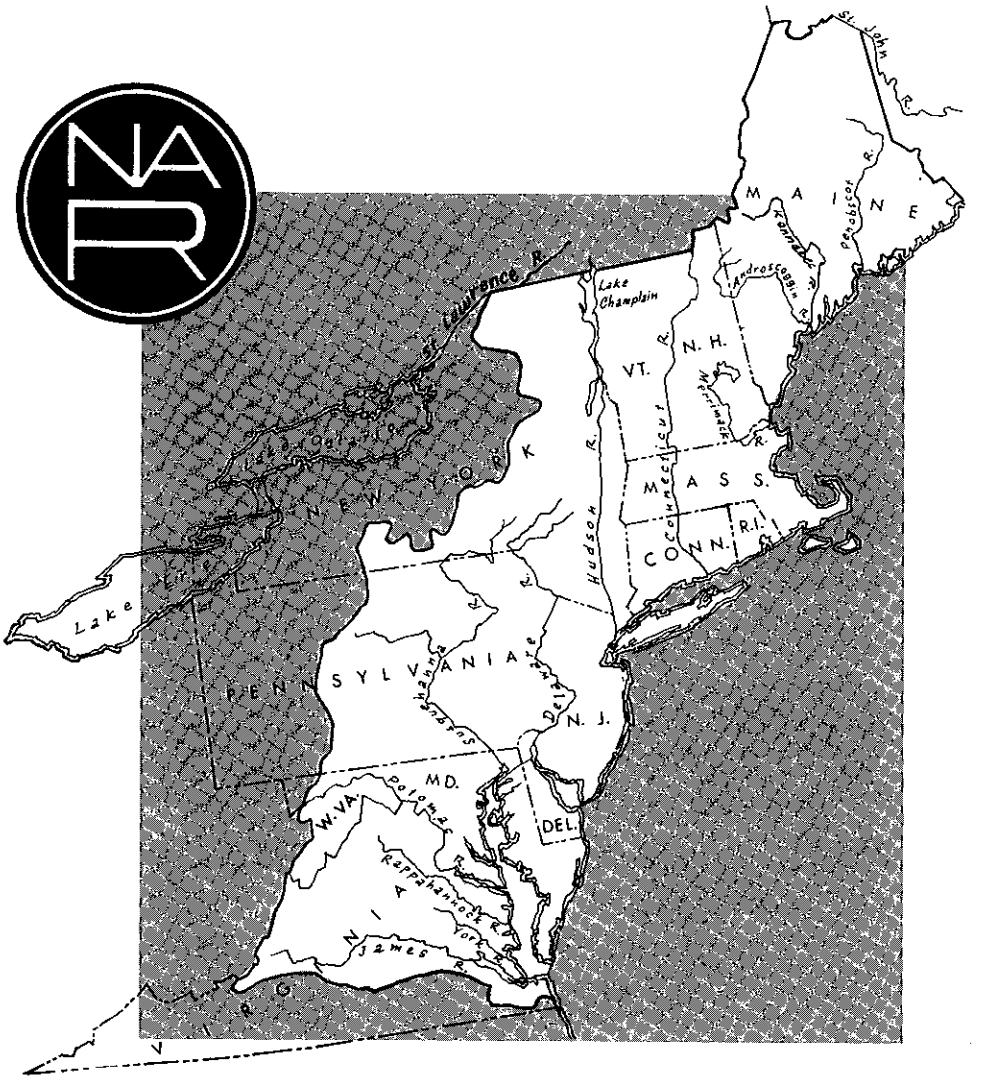
The recommended program and alternatives developed for the North Atlantic Region were prepared under the direction of the NAR Study Coordinating Committee, a partnership of resource planners representing some 25 Federal, regional and State agencies. The NAR Study Report presents this program and the alternatives as a framework for future action based on a planning period running through 2020, with bench mark planning years of 1980 and 2000.

The planning partners focused on three major objectives -- National Income, Regional Development and Environmental Quality -- in developing and documenting the information which decision-makers will need for managing water and related land resources in the interest of the people of the North Atlantic Region.

In addition to the NAR Study Main Report and Annexes, there are the following 22 Appendices:

A. History of Study
B. Economic Base
C. Climate, Meteorology and Hydrology
D. Geology and Ground Water
E. Flood Damage Reduction and Water Management for Major Rivers and Coastal Areas
F. Upstream Flood Prevention and Water Management
G. Land Use and Management
H. Minerals
I. Irrigation
J. Land Drainage
K. Navigation
L. Water Quality and Pollution
M. Outdoor Recreation
N. Visual and Cultural Environment
O. Fish and Wildlife
P. Power
Q. Erosion and Sedimentation
R. Water Supply
S. Legal and Institutional Environment
T. Plan Formulation
U. Coastal and Estuarine Areas
V. Health Aspects

Appendix B
Economic Base



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NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY
COORDINATING COMMITTEE

PREFACE

This appendix consists of two parts:

Part I, which has been prepared by the Office of Business Economics of the U. S. Department of Commerce, presents historical and projected economic and demographic information for the following areas:

United States

North Atlantic Hydrologic Region

New England

States or portions of states in the North Atlantic Hydrologic Region

North Atlantic Region Water Resources Planning Areas

Part II has been prepared by the NAR Study Group. The tables in this part contain the same economic and demographic data and projection series found in Part I, but the data and projections have been disaggregated and reaggregated to fit the hydrologic areas used for NAR planning.

This final version of Appendix B has many revisions to take account of comments received from reviewers. All of these comments are on file at the NAR offices. Generally, comments on Appendix B have been of two types. The first type has consisted of a relatively large number of specific suggestions about area descriptions or other details; for example, the exact location of a steel plant or a reference to small numerical errors in the figures as compared to census figures. Almost all suggestions of this type have been incorporated into the Appendix. The second type of suggestions has included presentations of detailed alternative projections for particular areas based on alternative methodologies, or requests for alternative (more recent) OBERS projections. This type of suggestion has not been included in the revised Appendix B.

The purpose of Appendix B is to present, as of the date at which they were adopted for plan formulation (Eighth Coordinating Committee meeting, 25-26 November 1968), the OBERS projections supplied to the Coordinating Committee, reallocated from Water Resources Planning Areas to the 21 NAR planning hydrologic areas. Selected alternative projections in the NAR Study have been accommodated in alternative runs of the computational water demand model of the study, which was developed in part precisely to examine the implications for water resources planning of projections alternative to the OBERS projections; and accommodated in the detailed plan formulation process where alternative projections, such as for environmental quality or regional development for an area, have been influential in determining the proposed recommended plan for an area. Hence, it was decided that the place for consideration of alternative projection methodologies was in the process of plan formulation, rather than in Appendix B.

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PART I. HISTORICAL AND PROJECTED ECONOMIC AND DEMOGRAPHIC INFORMATION

INTRODUCTION

In March 1964, the Office of Business Economics, U.S. Department of Commerce (OBE) and the Economic Research Service, U.S. Department of Agriculture (ERS) undertook for the Water Resources Council (WRC) a nation-wide economic base study designed for use in water and related land resource development planning. This report presents the initial results of that study for the NAR.

The objective of the OBE-ERS program is the estimation of the economic base of specified areas of the Nation currently and at intervals to the year 2020. The resulting information will provide a basis for estimating future economic needs for the development of water and related land resources. The economic bases presented here consist of two major parts: (1) an historical and current picture of the economy of each area; and (2) a projection of these economic pictures to the years 1980, 2000, 2020.

The historical and current picture of each area is shown in terms of time series of income, employment, population, and production. The projections are intended to measure the same economic characteristics at selected points in the future.

The area economic pictures are designed for four major purposes. They provide a large, but not complete, segment of the data needed to establish past and current relationships between water use and economic activity. They provide a framework for identifying the economic strengths and weaknesses of each area together with the underlying causal factors. They furnish the analytical materials from which the projections are fashioned. And, finally, they form a base against which the economic consequences of alternative plans can be assessed.

The projections are designed for use in estimating future water and related land resource requirements. However, it should be noted that before projected economic activity can be translated into requirements for water and related resources with significant precision, substantial study is needed to determine the nature of current and past relationships between economic activity and water and other requirements.

National economic analysis and projections are based on a comprehensive body of economic intelligence known as the national economic accounts. These include the national income and product, flow of funds, interindustry sales and purchases (input-output) and balance sheets. These accounts provide an accurate and finely articulated picture of the national economy. Through them, direct and indirect

economic relationships can be measured and traced over time. Econometric models can be constructed to evaluate the effects of alternative lines of action.

Regionally, the situation is quite different. None of the basic economic accounts exist in full scope for all regions. With only one or two exceptions they do not exist for even selected regions. Indeed, there are no analytically useful detailed economic measures available by local areas for any period extending back further than 1958. Given this situation, it was necessary to construct the regional measures needed as inputs to the economic base study. Accordingly, a substantial amount of time and resources has been devoted to generating the current and historical regional series on which both analysis and projections are based.

The plan of study is as follows. National projections of the overall economy were made in terms of aggregates such as gross national product, the labor force, rates of productivity, and unemployment. From these summary measures were derived national totals of the economic series to be projected for local areas. These include income and employment by industry, earnings of workers by industry, an index of production for selected industries, and population.

Each of these national series was disaggregated to the 167 economic areas of the Nation. Projected values for economic areas were then further disaggregated and the component parts reassembled into the water resource planning areas as designated by the Water Resources Council.

Section I of this report discusses briefly the nature of projections in general. Section II describes how the national projections were generated and specifies the underlying assumptions. Section III covers the regional disaggregation of the national projections setting forth the assumptions and methodology used. Section IV presents tables giving historic and projected rates of economic production per employee for the heavy water-using industries. Section V gives the economic base for specified areas. Finally, Addendum 1 describes briefly the construction of the basic income data used; Addendum 2 presents a set of alternative national projections on the basis of which the significance of the various assumptions used can be judged.

SECTION I. NATURE OF PROJECTIONS

Projections are generally regarded as conditional forecasts of the future. The caveat as to their conditional nature reflects two major considerations - one a weakness, the other a strength.

First, since it is not possible to foresee the future, projections must necessarily be based on an extension of past relationships believed to have future relevance for the measure being projected. The reasoning that underlies the extension of the past relationships comprise the assumptions that make the projection a conditional forecast. To the extent that the assumptions are incorrect and are not offsetting in their effect on the overall aggregate, the projections will be in error.

Secondly, most often the purpose of a projection is to enable decision makers to appraise future economic conditions; identify developing or potential problem areas; and take such corrective action as appears warranted. This corrective action if successful will cause the actual situation at the future date to differ from that projected. The error introduced into the projections by this second factor is a measure of the success of the study and is welcome.

Projections must necessarily be based on the past, for without the benefit of past experiences and observations it would not be possible to conceive of even the nature of the future. Moreover, the use of the past to view the future requires that we accept as a basic premise the fact that a relationship exists between the past and the future and that this relationship can be identified and measured. Without this premise the very possibility of projections is denied. A second premise necessary to the making of projections is that an order or pattern can be recognized among past events and translated into the future.1/

Thus, the essence of the projection procedure must be to study the past in order to construct an empirical picture of the economy of each area and to trace its economic path over as long a period of time as the conditions which affected it appear to have relevance for the future.

1/ See Simon Kuznets, "Concepts and Assumptions in Long-Term Projections of National Product," Studies in Income and Wealth, Volume 16, National Bureau of Economic Research, 1954.

From the foregoing, it follows that the first step in developing a projection procedure is to select measures that can be implemented statistically in two ways. First, it must be possible to assemble the measures in sufficient detail so that appropriate interrelationships among their components can be determined. Secondly, it must be possible to construct time series of the measures so that trends in the interrelationships can be determined because projections must necessarily be based on an extension of past trends. Past trends may be modified substantially in the projection process, but such modification if it is to be more than a guess or a gamble can rely only on past experience. For example, a strong historical growth trend projected for mineral production in a particular area may be terminated abruptly at some future point because of the expected depletion of the resource. The probability as well as the timing of this occurrence would have been determined by dividing measured or estimated mineral supplies by the projected rate of production (or demand), with both numerator and denominator based on past observation. Another example of a reasoned extension of past trends is afforded by the changing relationships of residentiary industries to basic industries in an area. A time series in an area may show a strong uptrend in the ratio of residentiary to total employment or income. Analysis may reveal that as a result of this trend the area has moved from a very unbalanced colonial-type economy to one that is approaching a position of equilibrium in respect to the residentiary-total relationship. Ceteris paribus, a projection would terminate the uptrend in the relationship at the point in time when it was anticipated that the area's residentiary-total ratio would be in line with that which usually held in an area of the type under analysis.

Given the need for empirical data in detail over time, together with the general lack of satisfactory regional data, it is evident that the correlation between the degree of sophistication of the projection method or model used and the reliability of a long-run regional projection is quite low. For the more complex the projection model or measure used, the greater is the demand for historical data. Without an adequate empirical base many relationships in a complex model will be improperly specified. Such improper specification can serve only to distort the informational output.

The major obstacle here is the lack of observed data adequate to establish a past pattern which, in turn, can be extended into the future. Since the field of regional economics is characterized by a paucity of data that extends over a substantial time period, a premium is placed upon simple models in which firm relationships can be established. It is for these reasons that personal income and employment were chosen as foundations for the regional projections instead of more complex measures such as gross area product. Likewise, techniques requiring information in unattainable quantities at the local-area level (such as interregional input-output or optimizing models) were avoided.

The detailed assumptions underlying the projections are set forth in Sections II and III in connection with the descriptions of the methodology to which they apply. Certain assumptions, however, are applicable to the projections generally. These are:

The Government will implement the policies needed to maintain full employment under a free enterprise economy.

The projections are assumed to be free of the distorting effects of a major war at the several target dates. That is, although wars may occur within the time-span of the projections, it is assumed that at the several target dates the distortions caused by such wars as may have occurred would have worked themselves out of the economic structure and that each regional economy would be on its secular trend line.

Long-range projections are generally intended to be continually renewed. It is possible, for example, that the average life span of 50-year projections may turn out to be less than half their intended length. Thus, decisions with short-range consequences are less affected by errors characteristic of long-range projection.

Decisions with very long-range consequences will suffer most from erroneous projections. Even these are somewhat protected, however, in that the near-term portion of a long-range projection is less likely to be in error than the long-term portion, and therefore the entire commitment should not be judged on the merits of its most uncertain part.

No attempt has been made to look into the future and identify the specific details of the future economy. It is assumed that the impact of the new products, new activities, new technologies, etc., that will inevitably come into being will be subsumed under the labels by which we identify the economy of today.

Finally, it should be noted that the very fact that it was considered necessary to state a certain assumption implies the possibility that the assumed situation may not materialize.

SECTION II. PROJECTIONS OF NATIONAL TOTALS

As already noted, the general procedure followed in making the projections was first to project national totals of each of the relevant measures and then to disaggregate these national totals to local areas. This section describes the projection of the national totals setting forth the specific assumptions used. The national projections fall into two groups: (1) summary aggregates, and (2) industry breakdowns.

NATIONAL PROJECTIONS OF SUMMARY AGGREGATES

The key national aggregate to be projected is the gross national product which forms the capstone of the framework of economic projections. This measure is derived as the product of six basic assumptions which are expressed through measures of:

(1) Population
(2) Labor force
(3) Total employment
(4) Private employment
(5) Hours worked
(6) Product per man-hour

As will be noted, other assumptions were involved but these had minor effects on the projected aggregates.

In order to take into account the inevitable differences of opinion as to the validity of the assumptions, three levels (high, middle, and low) have been postulated for each. Use of the three levels for each assumption leads to 729 possible values of GNP in each projected year (36 = 729). The results of selected combinations of assumptions are shown in Addendum 2.

No attempt has been made to assign relative probabilities to the many possible combinations of assumptions, nor have the subtle functional inter-relations which may obtain between the assumptions been plotted. For example, the manner in which labor force participation rates respond ceteris paribus to changes in the rate of unemployment has not been incorporated into the projections. It has been judged that the most reasonably probable combination of the six assumptions is the one which includes a mid-level value of each. Those who differ may pick out other selected assumption levels and find (in Addendum 2) the projected time series thereby implied. However, no provision is made for those who wish to start with one set of assumptions and end with another. The Addendum tables show the time series implications of a set of assumptions which operates over the entire 55 year period, 1965 to 2020.

Each of the major assumptions are discussed in the following paragraphs with the argument focused mainly on the middle value of each.

Total population. The population of the United States (including armed forces abroad) increased from 152,271,000 in 1950 to 194,592,000 in 1965 - an average annual compound growth rate of 1.6 percent. The mid-value projection used here calls for a rise to 398,642,000 in 2020 - a growth rate of 1.3 percent for the 55-year period. Both the historical and projected series are from the Bureau of the Census.2/

Census shows four alternative projection series designated A, B, C, and D. Each of these makes the same basic assumptions regarding deaths and net immigration, but they differ in regard to the birth rate. The four basic projections assume the following "terminal" levels for total fertility rates in the year 2000.

Series A - 3,350 (continuation of 1962-1965 level)
Series B - 3,100 (moderate decline from 1962-1965 level)
Series C - 2,775 (substantial decline from 1962-1965 level)
Series D - 2,450 (sharp decline from 1962-1965 level)

Total fertility rates applicable to a given year can be calculated as the arithmetic sum of age specific rates for the several age brackets of women in the particular year. The course of experience in this regard in recent years has been--

Year	Rate
1940	2,301
1945	2,491
1950	3,091
1955	3,580
1960	3,695
1965	2,984

It is significant that the peak value for this measure among recent years was 3,767 in 1957. The estimated value was down to 2,792 in 1966.

2/ Bureau of the Census, Current Population Reports, Series P-25, No. 359, February 20, 1967. The Census projections stop at the year 2015. An extension to 2020 was made by applying to the 2015 figure the rate of increase shown for the preceding 5-year span.

The sharp decline in total fertility rates has caused considerable reexamination of the appropriate long-term population growth trends. Some technicians have revised long-term expectations downward. Others think that births have merely been delayed and that long-term rates are not undergoing much change.

The projections to 2000 & 2020 are shown below for each series together with implicit growth rates from 1965 to 2020.

Series	Actual 1965	Population projections		Annual growth rate (percent) 1965-2020
		2000	2020	
A	194,572,000	361,424,000	530,763,000	1.8
B	194,572,000	335,977,000	467,332,000	1.6
C	194,572,000	307,803,000	398,642,000	1.3
D	194,572,000	282,642,000	340,023,000	1.0

Although there is no unanimity of opinion as to which of the four series is most probable, informal canvasses of a limited group of users indicate that series C is the first choice in most instances with the next largest group favoring an average of B and C. In the projections contained here, series B, C and D have been used as the high, middle and low assumptions, respectively. The highest series, Census series A, has not been used.

Population of working age. The population 14 years old and over (the working age population) increased from 113,438,000 in 1950 to 138,261,000 in 1965, an average annual compound growth rate of 1.3 percent. The middle projection calls for a rise in this population group to 294,956,000 in the year 2020, an average growth rate from 1965 to 2020 of 1.4 percent. Projections of this segment of the population were also taken directly from the Census Bureau through 2015. The population aged 14 years and older is in all respects a sub-set of the total population - hence, many of the same qualifications apply. 3/

3/ Many source materials have been converted only partially to the new "16 years old and over" definition. Therefore, in the present projections, the "14 years old and over" concept is used throughout.

The civilian labor force. In 1965, the total labor force comprised 56.7 percent of the working-age population. From this level the basic assumption is that the overall participation rates will rise to a plateau in 1990, at which point the three alternative rates will be:

(1) (high) 59.8 percent
(2) (middle) 58.3 percent
(3) (low) 56.8 percent

The assumptions of slight rises in participation rates are based on several considerations. First, since hours of work are expected to be shortened, conditions of labor force participation should prove more agreeable to many persons not presently in the working group, especially women. Second, whatever degree of affluence may be attained in terms of goods and services, it is likely that the need to avoid boredom and to participate meaningfully in economic life will motivate about as many people as today into labor force participation. That is, material affluence will not necessarily imply "welfare" or "well being" of a sort which short circuits the desire for such participation.

The analysis used in selecting the appropriate labor force participation rates leaned heavily on a study prepared in the Bureau of Labor Statistics.4/ This study called for rising participation rates traceable mainly to rising participation rates in the female segment of the population. Among males, declining rates in the 18-19 year-old group and in the group over 60 are offset by rising rates for other age brackets. The rising rates in the female groups are traceable to all age groups but are especially strong for those over age 35. Participation rates are rising for women both with and without young children, but are rising from different levels. For older women (over 44) an important factor is marital status. The rates for married women are lower than those for women who are single, widowed, divorced or separated. Generally, however, participation rates are rising from different levels both for married and other women.

Since a large part of the projected increase in labor force will be among young workers (14-17) men still in school (18-24) and adult women, among whom part-time work is prevalent, Cooper and Johnston expect the number of part-time workers to rise substantially within the next 15 years. Since these workers will be largely inexperienced,

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4/ Sophia Cooper and Denis F. Johnston, "Labor Force Projections for 1970-80." Monthly Labor Review, February 1965, U.S. Government Printing Office, 1965.

there will be considerable competition at entry levels among youths and between youths and older women. On the other hand, if suitable jobs are not available, the projected increase in labor force activity of married women will not occur. A similar qualification applies to young persons still in school.

Participation rates for men 60-64 have been declining in recent years, probably as a result of more liberal retirement provisions in pension plans and changes in the social security law permitting retirement at 62.

For men 65 and over, participation rates have declined steadily since the end of World War II in years of relatively high employment as well as in years of recession. Some of the reduction in labor force activity may represent involuntary withdrawal because of difficulties in finding jobs. A study of the Department of Health, Education and Welfare suggested that about 20 percent of the men 62 and over who had retired between 1957 and 1962 could be considered to have left involuntarily. In a period of true full employment, of course, such withdrawals would be less frequent. Since trends differ, Cooper and Johnston made separate projections for agricultural and nonagricultural pursuits. A weighted average of the agricultural-nonagricultural components was then made for each age group.

The Cooper-Johnston study found that higher employment rates (lower unemployment rates) have been historically associated with higher labor force participation rates. The participation rates discussed here (from Cooper and Johnston) have corresponded to an assumed employment rate of 96 percent. It follows that our projections correspond qualitatively to the Cooper-Johnston relationship only when they utilize high, middle or low assumptions with respect to both employment rates and labor force participation rates.

In order to derive the civilian labor force, it was necessary to subtract the projected manpower in the armed forces from the total labor force. It would have been possible to make numerous complex assumptions regarding the size of the armed forces. This has not been done. Instead, a return to the pre-Vietnam scale of the armed forces has been assumed. Military strength in recent years has been:

Year	Strength
1950	1,650,000
1955	3,048,000
1960	2,514,000
1965	2,722,000

For 1970, a level of 2,700,000 is assumed. For 1975 and subsequent projection points the assumed level is 2,600,000. There are no separate "high" "middle" or "low" assumptions.

Civilian employment. The level of civilian employment depends upon the number of civilians in the labor force who are successful in finding work. The basic assumption used here is that fiscal, monetary and labor market policies will be adequate to sustain an average performance better than that experienced in 1965 when the unemployment rate was 4.6 percent. However, at this time it is not known just how low the unemployment rate can be kept for a sustained period. The legitimacy of the last two years' experience as sustainable rates is colored by the fact that they were achieved in conjunction with unsatisfactory rises in prices. It seems clear, however, that the interim target of a 4-percent unemployment rate set by the Council of Economic Advisors in 1961 has been achieved and can be considered as an operating level. Empirical evidence as to the feasibility of reducing this rate still further and at the same time maintaining reasonable price stability has been clouded by the spurt in defense spending since mid-1965. Nevertheless, the assumptions used allow for considerable latitude in employment rates:

(1) (high) the employment rate rises to 96.5 percent for 1970 and subsequent years (3.5 percent unemployment).

(2) (middle) the employment rate rises to 96.0 percent for 1970 and subsequent years (4.0 percent unemployment).

(3) (low) the employment rate rises to 95.5 percent for 1970 and subsequent years (4.5 percent unemployment).

Private civilian employment. As of 1965, there were 62,556,000 employees in private industry, which amounted to 86.7 percent of all civilian employees.

The general assumption is that the proportion of private employees in the civilian total will decline somewhat and that government employment will rise correspondingly. The expected rise in government employees, however, is a mild one - much less sharp than the rise experienced over the past 20 years.

In the period 1950-1965, government employment as a whole increased at the rate of 3.4 percent per year. Within this total rise, State and local employment increased at the rate of 4.2 percent, while Federal employment rose 1.6 percent per year. The middle assumption presented below implies a total civilian government growth rate of 2.3 percent - the result of an annual rate of 2.5 percent for State and local employment and 1.2 percent for Federal employment. The three basic assumptions in terms of the percent which private employment constitutes of total civilian employment are:

(1) (high) a decline to 84.0 percent in 2020
(2) (middle) a decline to 79.6 percent in 2020
(3) (low) a decline to 75.2 percent in 2020

In terms of the middle assumption, civilian government (Federal, State and local) employment increases from 9,623,000 in 1965 to 33,122,000 in 2020.

Hours worked per year. The general assumption concerning hours worked per man per year in the private economy is that they will continue to decline. In 1965, the annual number of hours worked was 2,020, a product of 40.5 hours per week for 49.9 weeks. By 2020, the middle projection calls for 1,749 hours per year. Whereas annual hours declined at the rate of 0.30 percent per year from 1950 to 1965, the projected rate of decline from 1965 to 2020 is 0.26 percent.

The basic premise is that the easier reductions in hours have already been made. However, many imponderables remain concerning the general demands to be made in the economy and the consequent strength of the pressure to maintain or resist declines in present annual hours of work.

The three assumptions for hours of work in the private economy are:

(1) (high) that annual hours will decline to 1,949.
(2) (middle) that annual hours will decline to 1,749.
(3) (low) that annual hours will decline to 1,549.

Product per man-hour. The product per man-hour in the private economy in 1965 in 1958 dollars was $4.42. The post-war growth rate, 1947-1966, had been 3.2 percent per year.

Considerable professional opinion holds that the 3.2 percent rate is not sustainable for the long run. This view is based on the opinion that the 3.2 percent rate was caused in part by the sizable post-war shift of workers from farm to nonfarm work. Since this shift cannot be repeated on the same scale, the long-term prospect in this view is for a lower productivity growth rate in the private economy. Even though empirical evidence on the effect of the farm-nonfarm shift is fragmentary and inconclusive, the a-priori argument has been given some weight. Accordingly, the middle assumption concerning the productivity growth rate calls for 3.0 percent instead of 3.2 percent.

The three assumptions regarding annual growth of productivity in the private sector are:

(1) (high) a 3.2 percent growth rate in product per man-hour in the private economy.

(2) (middle) a 3.0 percent growth rate in product per man-hour in the private economy.

(3) (low) a 2.8 percent growth rate in product per man-hour in the private economy.

Assumptions have now been made regarding each of the basic factors required to generate private gross national product for the years ahead. The product of private employment, hours per year, and productivity per man-hour yields gross national product originating in the private sector.

In order to arrive at total gross national product, that originating in government must be added. In accordance with conventional income and product accounting, no productivity increase is allowed for in projecting the gross product of the government sector. Instead, projected employment in these sectors is multiplied by the product per worker in 1958 dollars. The constants used were as follows:

general government	$4,686	(1958 dollars)
government enterprise	$6,452	(1958 dollars)
military	$4,012	(1958 dollars)

The addition of these governmental gross product projections does not increase the number of projected gross product time series. Instead, it merely adds a governmental product time series to each of the 729 private product series already established, and thereby yields 729 total gross national product series.

The following table gives an overview of the historical data and the middle value projections for selected years with all values expresses in 1958 dollars.

Year	Private gross product	Government gross product	Total gross national product
1950	319,410,000,000	35,878,000,000	355,288,000,000
1955	392,007,000,000	45,956,000,000	437,963,000,000
1960	438,523,000,000	49,159,000,000	487,682,000,000
1965	558,671,000,000	57,988,000,000	616,659,000,000
1980	1,071,474,000,000	80,320,000,000	1,151,794,000,000
2000	2,361,517,000,000	118,021,000,000	2,479,538,000,000
2020	5,087,660,000,000	170,085,000,000	5,257,745,000,000

Gross national product is the most comprehensive and analytically useable measure of economic production that has been constructed. From it, most other macro-economic measures can be derived. As already noted, because of technical problems, it has not yet been feasible to measure gross product on a less-than-national basis. Accordingly, national totals of other measures that can be disaggregated geographically have been constructed as described in the following paragraphs. These include personal income and earnings of persons engaged in production.

Personal income in constant dollars was divided by gross national product in constant dollars in each year of the period 1948-65. This established a time series of the relationship between personal income and gross national product. This relationship was then projected into the future, rising from 80.2 percent of gross national product in 1965 to 94.1 percent of it in 2020. The rise in the ratio of personal income to gross national product reflects mainly a basic difference in the two concepts. Gross national product in real terms is a measure of production. Personal income in real terms, or constant dollars, is a measure of the purchasing power of persons. The difference in these two concepts is most evident in the treatment of the government sector. Whereas, by definition, the per worker real output of government employees is held constant over time, their wages, adjusted for changes in the prices of consumer goods and services, rise at approximately the same rate as do wages of persons in the private sector. As a result, personal income in dollars of constant purchasing power rises somewhat faster than does gross national product.

Earnings of persons engaged in production, a major component of personal income, are made up of the sum of wages and salaries, proprietors' income and other labor income. The nonearnings portion of personal income consists of property income, transfer payments, and personal contributions for social insurance, the latter a deduction from personal income. The relationship of earnings to total personal income in the 1948-65 period was projected to 2020 and earnings for the projected years were derived as the product of the projected percentages and projected total personal income.

Both total personal income and total earnings were adjusted downward to a domestic basis by subtracting wages and salaries and other labor income received by U.S. Government employees stationed temporarily abroad.

The following tabulation shows the relationship between personal income and earnings for selected years in millions of 1958 dollars.

Year	Total personal income	Total earnings	Overseas wages and salaries and other labor income	Domestic personal income (ex-overseas)	Domestic earnings (ex-overseas)
1950	274,571	226,835	1,751	272,820	225,084
1955	335,010	280,475	2,902	332,108	277,573
1960	389,653	310,781	2,206	387,447	317,575
1965	494,719	399,607	2,740	491,979	396,867
1980	967,104	754,341	4,104	963,000	750,237
2000	2,204,086	1,679,514	7,402	2,196,684	1,672,112
2020	4,947,748	3,735,550	13,602	4,934,146	3,721,948

Note: In millions of 1958 dollars.

The following table contains the summary national totals used in developing the industrial breakdowns required for the regional disaggregations.

TABLE B-1
SELECTED NATIONAL AGGREGATES*

Year	Total population (Census) (000)	Population 14 and over (Census) (000)	Labor force participation rates (computed)	Labor force (BLS) (000)	Civilian labor force (BLS) (000)	Unemployment rate (BLS)	Civilian employment (BLS) (000)
1950	152,271	113,438	.571	64,749	63,099	.053	59,957
1955	165,931	119,440	.577	68,896	65,848	.044	63,193
1960	180,684	127,335	.574	73,126	70,612	.056	66,681
1965	194,592	138,261	.567	78,357	75,635	.046	72,179
Rate 1950-1965	1.6% (Census "C")	1.3% (Census "C")		1.3%	1.2%		1.3%
1980	235,212	174,234	.578	100,707	98,107	.040	94,183
2000	307,803	227,470	.583	132,615	130,015	.040	124,814
2020	398,642	294,956	.583	171,959	169,359	.040	162,585
Rate 1965-2020	1.3%	1.4%		1.4%	1.5%		1.5%

*Except for columns 2 and 3 on this page, all projected values are those of the Office of Business Economics.

TABLE B-1
SELECTED NATIONAL AGGREGATES - CONT'D

Year	Civilian government employment (BLS) (000)	Civilian private employment (BLS) (000)	Private economy hours per man-year (BLS)	Private economy product per man-hour (computed) (1958 dols.)	Private economy gross product (computed) (000,000) (1958 dols.)	Gross national product (computed) (000,000) (1958 dols.)
1950	5,817	54,140	2,125	2.79	319,410	355,288
1955	6,838	56,355	2,091	3.34	392,007	437,963
1960	7,943	58,738	2,026	3.68	438,523	487,682
1965	9,623	62,556	2,020	4.42	558,671	616,659
Rate 1950-1965	3.4%	1.0%	-0.3%	3.1%	3.8%	3.7%
1980	14,365	79,818	1,949	6.89	1,071,474	1,151,794
2000	22,232	102,582	1,850	12.44	2,361,517	2,479,538
2020	33,122	129,463	1,749	22.47	5,087,660	5,257,745
Rate 1965-2020	2.3%	1.3%	-0.26%	3.0%	4.1%	4.0%

TABLE B-1
SELECTED NATIONAL AGGREGATES - CONT'D

Year	Total manpower civilian plus military (BLS) (000)	Product per man (computed)	Product per capita (computed)	Total personal income (OBE) (000,000)	Personal income per capita (OBE)	Domestic personal income (OBE) (000,000)	Domestic earnings (OBE) (000,000)
		1958 Dollars					
1950	61,607	5,767	2,333	274,571	1,803	272,820	225,084
1955	66,241	6,612	2,639	335,010	2,019	332,108	277,573
1960	69,195	7,048	2,699	389,653	2,157	387,447	317,575
1965	74,901	8,233	3,169	494,719	2,542	491,979	396,867
Rate 1950-1965	1.3%	2.4%	2.1%	4.0%	2.3%	4.0%	3.9%
1980	96,783	11,901	4,897	967,104	4,112	963,000	750,237
2000	127,414	19,460	8,056	2,204,086	7,161	2,196,684	1,672,112
2020	165,185	31,829	13,189	4,947,748	12,412	4,934,146	3,721,948
Rate 1965-2020	1.4%	2.5%	2.6%	4.3%	2.9%	4.3%	4.2%

INDUSTRIAL COMPOSITION OF INDUSTRY PROJECTIONS

In order to obtain national control totals for use in regional disaggregations it was necessary to prepare projected industry breakdowns of persons engaged in production, employment on a decennial census basis, and the earnings component of personal income. The initial step in the development of these national controls was that of projecting an industry breakdown of gross national product.

Gross product originating by industry. OBE's estimates of gross product originating by industry in constant (1958) dollars for the years 1948-1966 were divided into two groups - manufacturing and all other industries. The trend in the percent that each group formed of total gross product from 1948 to 1966 was projected to 1980, 2000, and 2020. Application of the percent shares to projected total gross national product established major control totals for manufacturing on the one hand and nonmanufacturing on the other.

The gross product originating in each of 43 industries in the years 1948-1966 was examined. First to be considered was the trend in the percent that each of these industries made of total gross national product. Next, a trend line was fitted to the dollar amounts of gross product originating in each industry. First approximations of gross product originating by industry were made by extending the trends revealed by the two approaches. In most instances the results of the two methods were in close agreement. In cases of significant difference, further exploration was undertaken. For industries producing consumer goods, the implications of gross product originating as a function of population growth was explored and the initial projections adjusted where necessary. For industries whose product constituted mainly raw or semi-finished inputs to another industry, the implications of gross product originating as a function of growth in a related industry were explored and appropriate adjustments of the prelininary projections made.

The results of the explorations of consumer-oriented and industry-oriented industries were used to mediate the differences noted above between the results of projecting a share of the total gross product and the direct projection of the gross product originating values.

Following the choice of a first stage projection of gross product originating in each of 43 industries, the first stage values were adjusted to the appropriate manufacturing or nonmanufacturing control totals noted above. As a result, the 43 industry projections of gross product originating summed to projected gross national product.

Persons engaged in production. "Persons engaged in production" includes both wage and salary workers and proprietors. Thus, in basic content it resembles the measurement of employment in the decennial censuses or in the monthly report of the labor force. However, there are three major points of difference: (1) the "persons engaged" series

reflects an annual average rather than an April date; (2) In persons engaged, all government employees are included in the government sector, while government employment reported in the 1960 Census is scattered very widely among other industries; (3) Finally, it should be noted that the persons engaged series consolidates the count to a full time equivalent basis, whereas Census and the Monthly Report of the Labor Force (MLRF) of the Bureau of Labor Statistics present a head count.

The first and third differences above are partially offsetting. Also, there is an advantage in the persons engaged series for initial projection work in that it is less volatile than the possible alternative of the full- and part-time employee series. The latter series would bring into the count part-time workers - whatever the time of the year in which they occur in contrast to census count which occurs in early April.

As with gross product originating, two preliminary projections of persons engaged in production were made. First, industry shares of total persons engaged in production were projected and applied to national projections of employment.5/ Second, the numbers of persons engaged in production were independently projected. The two projections of industry employment were generally in close agreement.

In the case of differences as well as in the case of agreement all projections were subject to a new test. It was assumed that some regression would occur toward the national average in gross product originating per man. Where such regression was not in the projections, adjustments were made to projected civilian employment, to projected gross product originating, or to both series. The result of the entire procedure was a projection of persons engaged in production both private and government and within government both civilian and military.

Employment on a Decennial Census basis. The projections of persons engaged in production derived as noted above were adjusted to an industrial grouping as close as possible to that used in the Decennial Census enumerations. This involved distribution of civilian government workers to several industries other than government in accordance with similarity of industrial pursuit as recognized in census classifications. This adjustment was necessary since the only comprehensive employment series covering all local areas was that in the censuses of population. The resulting national totals of employment by industry were used to extend the industry figures in

5/ The projected national governmental employment (both civilian and military) having first been subtracted from the total national manpower projection discussed above.

the 1960 Census of Population to 1980, 2000, and 2020. These provided the national totals of employment needed for the regional disaggregation.

Domestic personal income by type of payment. The projection of constant dollar personal income on the basis of its relation to total constant dollar gross national product has been explained. For purposes of eventual regional distribution and projection it was necessary to adjust total personal income downward to domestic personal income from which the earnings of Federal employees - both military and civilian - stationed temporarily abroad were excluded.

The parts of domestic personal income were measured historically and projected in the detail suggested by the following tabulation:

Year	Domestic Personal Income	Domestic Earnings	Property Income	Transfer Payments	Personal Contributions to Social Insurance
1950	272,820	225,084	33,046	18,181	-3491
1955	332,108	277,573	41,524	18,653	-5642
1960	387,447	317,575	51,218	27,684	-9030
1965	491,979	396,867	70,925	36,540	-12353
1980	963,000	750,237	159,944	81,915	-29096
2000	2,196,684	1,672,112	387,481	203,210	-66119
2020	4,934,146	3,721,948	873,368	488,673	-149843

In addition to the detail in the foregoing tabulation, domestic earnings were examined for each of 43 industries in the postwar period. The percent share which each industry constituted of total domestic earnings was projected. The projected shares were applied to total projected domestic earnings for a first approximation of domestic earnings in each industry. In addition, those industries with predominantly a product output (agriculture, mining, and manufacturing) were examined for the trend in the relationships between domestic earnings and gross product originating. In general, the two types of trends when projected implied very similar domestic earnings for the product industries. Differences were mediated by reference to independent projections originating in other governmental agencies.

In projecting industry breakdowns of the various aggregates the question of new products, new industries, and an oversupply of certain commodities arise. It may be noted that the projections made in this report fit within a total industrial classification framework. This means that the new products of the future will be made mainly by the industries of today. Changes in the industrial mix of this type have been going on for many years and a continuation of such developments is included implicitly and unidentifiably in the projections.

It is because of this that it is difficult to foresee a limit on an industry's size because of a satiation of demand for the products of that industry. For what appears now to be an excess production of product A may be the correct amount of product A when it is placed in the combination A + B; product B may be a new product or service lending a new character to the contribution of industry A.

SECTION III. REGIONAL PROJECTIONS

The art of regional projections is quite young, most of the experience in the field having been accumulated over the last decade. In spite of their relatively recent emergence, regional projection models have already been produced ranging from naive extrapolations to complex interdependent systems of equations. Clearly, the greater the detail and the interdependency of elements in the model, the more exacting are the data requirements. And the larger the number of regions, and therefore, the smaller the size of the regions, the greater is the likelihood that random events such as regional strikes, flood, drought, or the building of missile sites or dams will produce sharp changes, between points in time, in regional employment and income with respect both to the industries primarily affected and to the industries directly and indirectly linked to the primarily affected industries in the regional economy. The relative paucity of detailed regional data over time and the large weight that unsystematic or random events may impart to a regional economy at a point in time tend to decrease the effectiveness of highly systematic and detailed econometric forecasting models. On the other hand, because the regional economy does exhibit internal interindustrial linkages, a method which preserves fundamental economic relationships is to be preferred.

Accordingly, a methodology which reflects fundamental economic relationships and which combines the maximum data detail of both the top down and bottom up approaches was sought. The national projections methodology, described previously, provided the top down data detail which served as the controls for the regional projections.

The preparation of the regional projections required three broad areas of interrelated effort:

(1) The delineation of integrated economic regions in which industries were related or reasonable stability in interindustry relationships existed and projections could be made in maximum industry detail;

(2) The construction of economic measures which in their comprehensiveness and detail would serve to indicate the level of regional activity and permit the calculation of demands for water resource system outputs.

(3) The development of a regional projection model which makes full use of available data, and provides consistent solutions in which historical regional interindustrial relationships continue their transformation in the projected period, constrained by the control totals developed in the national projections, as well as by

information which could be assembled with respect to regional resource availabilities and limitations.

REGIONAL DELINEATION

The economic areas delineated for this study are based on the nodal-functional area concept. That is, to each urban center are attached the surrounding county units in which economic activity is focused directly or indirectly on the nodal center. Each economic area combines the place of residence and place of work of employees as nearly as possible so that there is a minimum of commuting from home to work across economic area boundaries.

Each economic area specializes in the production of certain types of transportable commodities and of nontransportable special services such as education at Cambridge, recreation at Miami, and finance in New York. The production locus of such goods and services is determined not so much by transportation costs as it is by the costs associated with special resources and, more generally by the benefits derived from internal and external economies. Different commodities are associated with production processes requiring different input relationships and the comparative advantage of a region for the production of a commodity is determined by the region's relative endowment of the required inputs. In addition, in many industries the effort to maximize returns leads to expanded production as a means of exploiting the economies of scale. This process, which can be implemented only if trade can be carried on with other areas, further reinforces regional comparative advantage and specialization.

In contrast to specialization in the export industries, each economic area approaches self-sufficiency in its residentiary industry sector; that is, while each area specializes in producing goods and/or services for "export" to other economic areas (and abroad) most of the services (and some goods) required by local residents and businesses are provided within the areas.

Thus, the economic areas used correspond to the closed trade areas of central place theory in which the number and type of establishments and their size and trade areas are bounded by the relative transportation costs from hinterland to competing centers. Each area approaches closure with respect to residentiary industries which include general and convenience retail and wholesale trade activities and those other producers of goods and services which are difficult or impossible to transport and are most efficiently consumed in the vicinity of their production.

Application of the foregoing concept to the U.S. economy yielded 167 areas each of which formed a reasonably complete and integrated economic unit characterized by comparative stability in interindustry relationships.

CONSTRUCTION OF ECONOMIC MEASURES

A classification of projection methodologies into naive and sophisticated groups reflects more the complexity of the economic measure used in the projection process than the method used to extend that measure into the future. And, ceteris paribus, the more complex or detailed the economic measure employed, the more useful will be the results to the extent that systematic components dominate the random, nonsystematic elements of the economic measure. However, in the real world of economic measures other things are seldom equal and in few areas are they more unequal than in regional economic measurement. Indeed, the regional field is characterized by a paucity of economic measures. Here, reference is not to the quantity of data available. What are lacking are time series for major constructs such as income and product tables, input-output accounts (which adequately reflect changing technical coefficients), employment series, and flow-of-funds tables disaggregated both industrially and geographically.

The method selected reflects in large part the type and quality of the input data available. If input-output or income and product tables are available both historically and currently for the geographic areas under study, the so-called sophisticated method of projection would be the choice in nearly every instance. If data availability imposes its usual constraints, a simpler model is usually demanded.

This study calls for economic projections for 167 economic areas initially. As a second step these are further disaggregated and reassembled into 200 or more water resource planning areas. Given this very large number of geographic areas, data input becomes a crucial consideration.

To prepare input-output tables or income and product accounts that are something more than mirror images of their national counterparts for at least two, preferably several more, years (in order to gauge trends) for 167 separate areas would be a task of near-impossible proportions. To measure personal income by local area for five selected years has required 2 years and sizable expenditures. Preparation of the more complex economic accounts, if indeed feasible, would require many times the resources needed for measuring personal income.6/

6/ Intercorrelation studies undertaken by the Regional Economics Division demonstrate that regional interindustrial relationships at the level of detail in the current study are adequately preserved even without recourse to separate regional input-output tables. The means for preservation of interindustrial relationships and the relative efficiency of this method over the input-output method will be further discussed in the section on projection models.

Given data requirements and data availability, we chose to project economic aggregates that are moderately comprehensive; that can be constructed to show adequate geographic and industrial detail; and for which time series can be prepared. Personal income, earnings, and employment meet these requirements more adequately than any alternatives.

The economic measure used most often in tracing and analyzing national economic developments is gross national product which shows, in considerable detail, the Nation's output of goods and services valued at market prices. It would be desirable to use the same yardstick in regional measurement and analysis, for gross regional product would be particularly effective in gauging future requirements for water and related land resource development.

So far, however, it has not been possible to measure gross product on a regional basis. The inability to construct such a local-area measure reflects the difficulty of measuring the geographic distribution of profits earned by multi-establishment corporations that operate interarea. While these do not bulk large in terms of numbers, they account for a sizable proportion of total profits. What, at this time, appear to be insuperable problems both of a conceptual and statistical nature, are encountered in any attempt to allocate corporate profits regionally. And such an allocation must be made if a valid measure of gross area product is to be derived.

A good case can be made that the profits of multi-area firms have no regional dimension, but that they stem in unknown degree from the central operations of the firm and their assignment to individual plants or areas must be based on a convention rather than economic theory. While this would be entirely acceptable for certain special purposes, it would be meaningless for measuring and analyzing economic production.

Given the obstacles to the measurement of gross product by areas, personal income was chosen as a substitute or proxy for the product measure.7/

Personal income is the current income received by residents of an area from all sources. It is measured before deduction of income and other direct personal taxes, but after deduction of individuals'

7/ The difficulties of a regional measure of gross product obtains also with respect to the regional input-output measure of gross output and the distribution of industry gross output among the industries and sectors.

contributions to social security, government retirement, and other social insurance programs. While cash income makes up the overwhelming bulk of the total - more than 95 percent on a national basis - personal income also includes several types of nonmonetary income or income in kind, in order to improve the scope of the estimates and thereby make the basis of comparison by areas more meaningful. The personal income measure covers the income received by residents of each area from business establishments, Federal and State and local governments, households and institutions, and foreign countries. All forms of income flowing to persons from these sources are included - wages and salaries, various types of supplementary earnings termed "other labor income," the net incomes of owners of unincorporated businesses (including farms), net rental income, dividends, interest, and government and business "transfer payments" (consisting in general of disbursements to individuals for which no services are rendered currently, such as unemployment benefits, relief, and veterans' pensions). (See Addendum 1 for a discussion of the derivation of income estimates.)

Personal income is the most comprehensive measure of consumer purchasing power and of consumer well-being available on a geographic basis. Because of the first characteristic, it serves well as an indicator of the demand for municipal water. The well-being of the population of an area is the primary objective of any economic program, and personal income is a useful yardstick for quantifying the economic impact of alternative programs of water resource development.

On the negative side, it may be noted that personal income is not a measure of production. The aggregate includes certain items which do not qualify as a return to some factors of production for its contribution in the production process. Two major examples of these are transfer payments and government interest. On the other hand, personal income excludes undistributed corporate profits, a major factor return.

Earnings of persons engaged in production - a major component of personal income - are sometimes used as a measure of production. Earnings consist of the sum of wages and salaries, proprietors' incomes, and other labor income. They come significantly nearer to a production measure than does employment since they embody labor's share of productivity gains as well as the quantity of labor expended. To the extent that capital is substituted for labor in the production process in an industry, changes in the earnings component of that industry will probably understate changes in total production in the industry. To a major degree, this shortcoming of the indicator can be overcome by developing precise historical measures of the use of water in relation to earnings in each industry. These may reveal relationships that can be extended into the future and used in conjunction with projected earnings to obtain a satisfactory estimate of future water requirements. Thus, though personal income does not qualify as the ideal measure for determining industry's future water

requirements, its earnings component appears to be a satisfactory substitute at this time. The Regional Economics Division is currently working toward development of a proxy measure of regional gross product for use in projecting water requirements.

Employment estimates statistically and definitionally comparable to the earnings component of the income series would be most useful. Neither time nor resources have permitted the construction of such a series, however. As a substitute, employment was taken from the censuses of population for 1930, 1940, 1950, and 1960. Because of intercensal changes in industrial classification, Census data as published could not be used. Detailed industries were combined into groups and certain statistical adjustments were made so as to achieve comparability over time. As a result of the combinations, the initial number of industries shown by the Census was reduced to 35 in 1950 and 1960 and to 31 in 1930 and 1940. In 20 industries, employment was extended to 1962 and 1965 by use of data from County Business Patterns.

As noted in the discussion of the national projections, Census-based employment differs from that of the U.S. Department of Labor. The Census series was clearly the choice for use in this study since it is the only employment series available on a local-area basis that covered the Nation.

Population estimates for each subarea were taken from the decennial censuses of population for 1930, 1940, 1950, and 1960. Estimates for 1962 and 1965 were derived by assembling such estimates as were available from both State and Federal sources and adjusting the sum of the local-area figures in each State to the midyear State total as published by the Bureau of the Census. In three States no local area estimates were available other than those published by the Census Bureau for metropolitan areas. In these States the 1960 relative county distribution was held constant for the nonmetropolitan area portion.

CHOICE OF PROJECTION MODEL

Three projection methods were examined. The first was a naive model, characterized by a complete absence of theoretical underpinnings in its formulation. It was devoid of systematic or interacting components and all projected elements were exogenously determined. It was essentially a "no change" model.

The exogenous determinant or predictor in this naive regional model was the national change in employment or income in a given industry or income component. That is, the base period ratio of regional employment or income to national employment or income in

each industry was applied to the projected national level of employment or income for the corresponding industry.

$$(1) \quad E^t_{ij} = (E^o_{ij}/E^o_{io})\ E^t_{io}$$

The subscripts i, j refer to the ith industry and the jth region, the subscript o refers to a summation: when in the right hand position, it is the summation of regions (= the Nation); when in the left hand position, it is the summation of industries (= total employment or income). Superscripts t, o refer to the projected period and the base period, respectively.

This naive model, though reflecting no more than the national industrial growth rates in each individual industry in each region, does, nonetheless, yeild an aggregate growth rate that differs from that for the Nation when the region's industrial composition differs from the national in the base period. Such a model, however, fails to take account of regional differences in rates of growth among individual industries. To take account of this, attention was turned to shift-share analysis.

Shift-share analysis is designed to discern regional departures from national industrial growth rates, and while its history goes back to 1943, most of the work using, clarifying and elaborating the technique appeared only in the late 1950's and 1960's.8/ In its simplest form, the shift-share technique distinguishes a proportional growth element and a differential growth element between a region and the Nation in each industry or income component.

$$(2) \quad E^t_{ij} = (E^o_{ij}/E^o_{io})\ E^t_{io} + C^t_{ij}$$

C^t_{ij} equals the difference between the level attributable to the national growth rate of the industry and the regional growth rate actually attained in the industry. It is the attention paid to the differences between regional and national growth rates in each industry or type of income that distinguishes the naive share model of equation (1) from the shift-share model of equation (2). Thus, the first term on the right hand side of equation (2) is equal to the entire right hand side of equation (1). The second term on the right hand side of equation (2) is called the share, or regional share, effect (C_{ij}) in shift-share analysis. It is, in fact, the difference between the "hypothetical growth," accounted for by the

8/ For a detailed explanation of this type of analysis, see Growth Patterns in Employment by County, 1940-1950 and 1950-1960, Lowell D. Ashby, Office of Business Economics, U.S. Department of Commerce, 1965.

first term, and the attained level of the left hand side. In basic or export industries the share effect is presumed to be connected with some regional competitive advantage (or disadvantage if the term is negative) in the industry. That is, the region presumably grows faster or slower than the rest of the Nation with respect to the industry in question because of differences in the productivity of the factors of production in the region relative to all other regions.

The causal economic factors associated with C_{ij} are the essence of industrial location theory. But, over the last 20 years, there has been very little correspondence between developments in industrial location theory and the empirical studies undertaken with respect to locational patterns.9/

Since industrial location theory has produced so little empirical evidence of the causal factors that determine industrial location patterns, projecting the C_{ij} term is still in an experimental stage. Two approaches have been tested. An econometric model which uses multiple regression to "explain" and project the C_{ij} effect for each of 50 industries has been developed in the Regional Economics Division. In it, the share effect is projected for each industry by a multiple regression analysis. That is, the C_{ij} effect in the most recent period for which data are available is regressed against a number of independent variables that relate to the preceding period or to a preceding point in time. This use of lagged variables obviates the necessity of making separate projections for each independent variable. Generally, the most significant of the variables used is the Cij effect in the given industry in the preceding period. Additional independent variables include measures such as the size and rate of growth of the industry, total population, level of income, and the C_{ij} effect in related industries. Inclusion of this last variable makes it possible to establish appropriate interindustry linkages in the regression equations. Regression coefficients are calculated by "cross-sectional" analysis in which the value of the variable in each area forms an observation.

As empirical evidence is gathered, as regional economic measurement is refined, and as the period for which the measures are available

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9/ B.H. Stevens and C.A. Brackett argue that this lack of correspondence is in part attributable to the inability of existing theory to generate testable hypotheses. Cf. Industrial Location, A Review and Annotated Bibliography of Theoretical, Empirical and Case Studies, Regional Science Research Institute, Philadelphia, 1967. This dearth of hypothesis testing has also been noted by J. Meyer, "Regional Economics: A Survey," American Economic Review, LIII, No. 1, March 1963.

lengthens, it will be possible to select independent variables that have a closer and more stable relationship to the C_{ij} effect. At that time the foregoing method would seem to offer the most potential for development. However, in view of the paucity of data with which to measure past changes in the geographic location of industries and the comparative lack of information on factors underlying these changes, the foregoing approach to projecting the C_{ij} element of industrial change with its considerable emphasis on mathematical precision seemed unsatisfactory.

Accordingly, another approach to projecting the C_{ij} term was chosen. This third model was less demanding of data and could make maximum use of all presently available information. For each industry, a curve was fitted to each region's share of the national total of income and employment (separately) for selected years of the period 1929-65. This curve was then extended into the future and the values of the region's projected share in the target years read from the curve.

This last approach, or third model, is actually a variation of "shift-share" analysis with regional share effects (C_{ij}) calculated implicitly rather than explicitly. That is, from equation (2) the following relationship between changes in the regional share of the national industry (E_{ij}/E_{io}) and the regional-share effect (C_{ij}) of the shift analysis holds:

$$(2') \quad E^t_{ij}/E^t_{io} = E^o_{ij}/E^o_{io} + C^t_{ij}/E^t_{io}$$

$$(2'') \quad C^t_{ij} = E^t_{io} \left[E^t_{ij}/E^t_{io} - E^o_{ij}/E^o_{io} \right] = E^t_{io} \Delta (E_{ij}/E_{io}).$$

Statistical tests were applied to the several models as well as to others not described here. Although results at this stage are inconclusive, indications are that the third model gave best results. Accordingly, it was chosen for further development. Two modifications were made.

First, substantial judgment was used in extending the curves. Such judgment reflected analysis of the numerous erratic observations in the historical time series; the timing of basic developments in a series; the status of the supply of the national resource on which a particular industry depended; and the shape of the curve fitted to the measured observations. This approach permitted the full utilization of all information that could be assembled on any given industry in any region.

The projections made of the basic or export industries as outlined above (and specified in equation 2) were considered final. However, analysis of the interindustry relationships that prevailed in both income and employment in the 167 functional economic areas led to the modification of the shift-share projection model to incorporate some features of an older basic-service model in projecting residentiary

industries. This comprised the second of the two modifications referred to above.

Studies of the relationships of local-service or typically residentiary activities to export or basic industries in a region have given rise to an often used basic-service model. The interactions of the exogenous and the local-service industries result in a multiplier effect very similar to a Keynesian consumption multiplier. In the case of the basic-service model, the endogenous or internally determined sector is comprised of local-service activities such as trade, local transportation and other service activities. Since the function of these local service or residentiary activities is to supply the local businesses and households with commodities and services which do not enter into interregional trade in substantial amounts, the magnitude of these residentiary activities is determined by the size of the population and income of the region. Thus, regional residentiary employment or income is functionally determined by regional total employment or income and hence must be solved simultaneously with the latter aggregates.

Projections of residentiary industries were then endogenously determined by functional relationships estimated in cross-section studies and projected by means of these relationships together with previously projected changes in the exogenous sector.

$$(3) \quad E^t_{oj} = \sum_{i=1}^{k} E^t_{ij} + \sum_{i=k+1}^{n} E^t_{ij}$$

$$(3') \quad \sum_{i=1}^{k} E^t_{ij} = \sum_{i=1}^{k} \left[(E^t_{io}/E^o_{io}) E^o_{ij} + C^t_{ij} \right] = B^t_{oj}$$

$$(3'') \quad \sum_{i=k+1}^{n} E^t_{ij} = f(E^t_{oj}) = a_{oj} + b_{oj} E^t_{oj} = S^t_{oj}$$

E^t_{oj} = the sum of regional employment in industries ($i = 1,\ldots\ldots,n$), of which the exogenous industries ($i = 1,\ldots\ldots,k$) are projected by means of the shift-share modified approach as in equations (2 - 2'') and the endogenous local-service industries ($i=k+1,\ldots,n$) are jointly determined with total regional employment (here shown as a simple linear relationship where the a + b parameters are estimated by cross-section analysis).

Substituting (3') and (3'') into (3) and simplifying gives the multiplier value similar in structure to the Keynesian multiplier (1/1 - marginal propensity to consume locally produced goods and services).

$$(3''') \quad E^t_{oj} = B^t_{oj} + a_{oj} + b_{oj}E^t_{oj} = (1/1-b_{oj})(B^t_{oj} + a_{oj})$$

Indeed, cross-section analysis undertaken by the Regional Economics Division has permitted estimates of industrially disaggregated regional residentiary sector multipliers.

$$(3^{IV}) \quad E^t_{oj} = B^t_{oj} + \sum_i a_{io} + \sum_i b_{io}E^t_{oj} = (1/1-\sum_i b_{io})(B^t_{oj} + \sum_i a_{io})$$

Clearly, since the a_{io} and b_{io} parameters represent a national central tendency, they do not necessarily fit the current case for individual regions.10/ The Regional Economics Division has adjusted them for regional use, however, by trending the current residentiary mix with respect to total regional employment toward the "national" parameters over the projection period. Thus, the working assumption is that regional local consumption patterns will trend toward national uniformity.

10/ Insofar as the parameters are central tendencies over all the regions of the Nation, they represent "national coefficients" - hence, the index notation a_{io} and b_{io} where the right hand notation position indicates their national character.

This adjustment is akin to trending the location coefficients in each residentiary industry, in each region, toward unity over the projection period. The a_{io} and b_{io} parameters can be shown to be the elements of the industry location quotients, which in most cases were very close to unity, corresponding to the closeness to unity which predominated among the individual location quotients for each residentiary industry in most of the regions. 11/

The closeness of the residentiary industry location quotients to unity in most regions, and the very high correlation of the regional residentiary industry employment with total regional employment which emerged in the Regional Economics Division's cross section studies - indeed the very high intercorrelation among all the residentiary industries and total regional employment and population - are convincing evidence of the efficacy of the disaggregated basic-service model employed in this exercise. We have shown in these studies that the n-degree freedom of the regional input-output table, with respect to residentiary industries, is not necessary as well as not parsimonious with respect to data. The single degree of freedom required of the simple correlation model where total regional employment is

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11/ Since the E_{ij} were, in fact, estimated as regional shares of the national industry, we have:

$$(1) \quad \frac{E_{ij}}{E_{io}} = a_{io} + b_{io} \frac{E_{oj}}{E_{oo}}$$

$$(2) \quad \frac{E_{ij}/E_{io}}{E_{oj}/E_{oo}} = \frac{a_{io}}{E_{oj}/E_{oo}} + b_{io} = L_{ij}$$

where the second equation is the weighted mean location quotient for the ith industry (L_{ij}) and if the mean regional share of total employment or income is substituted for the E_{oj}/E_{oo} term dividing the intercept, then the L_{ij} will be precisely unity. Since not all regions are equally well behaved with respect to each of the residentiary industries some judgment is applied in establishing the trend lines toward the "national" parameters. This is especially the case for the smaller regions which together account for considerably less than 10 percent of national population. In order to reduce the areas of application of judgment, the Regional Economics Division is experimenting with regional classification schema as well as more detailed analysis of industry components in order to identify empirical regularities and improve their estimation.

the explanatory variable accounts in almost all cases for more than 90 percent of the variance of the residentiary industry employments. Thus insofar as the residentiary industry employments tend to move in fixed proportions to total regional employment we need know only the value of the one to know the value of the other. 12/

12/ See, for example, the discussion on Macroanalysis versus Microanalysis, in Dorfman, Samuelson and Solow, Linear Programming and Economic Analysis, McGraw-Hill, N.Y., 1958, pp. 243-245, with respect to the adequacy of correlation methods against input-output requirements in cases where a single or several factors account for the variation of the other sectors.

Other studies have shown the empirical similarity of composite input-output matrix multipliers with aggregate basic-service mutlipliers such as in Isard and Czamanski, "Techniques for Estimating Local and Regional Multiplier Effects of Changes in the Level of Major Government Programs," Peace Research Society, International Papers, Vol. III, 1965, and Robert R. Nathan Associates and Resource Planning Associates, Recreation as an Industry, A Report prepared for the Appalachian Regional Commission, Washington, D.C., December 1966.

It is a deficiency of basic-service models of the type represented in the (3) series of equations as well as of regional input-output models, that regional growth is caused entirely by external stimulation through the growth of the exogenous sector. While this deficiency is not altogether redressed in this methodology, it is diminished to the extent that the relationship between the basic and the local-service sectors is stable. Such stability is, of course, greater, the more successful is the delineation of nodal regional configurations.

Thus, if r_e and r_b are the rates of growth of regional total employment, and regional basic or exogenous employment, respectively, it can be shown from equation (3''') that in this model the rate of growth of basic employment determines jointly the rates of growth of total regional and local-service employment.

$$(3^V) \quad \frac{E^t_{oj}}{E^o_{oj}} = (1 + r_e)^t = \frac{1}{E^o_{oj}} \frac{1}{1-b_{oj}} (a_{oj}+B^t_{oj})$$

$$= \frac{1}{a_{oj}+B^o_{oj}} \frac{1}{1-b_{oj}} \left[a_{oj} + B^o_{oj} (1 + r_b)^t\right]$$

$$\frac{}{1 - b_{oj}}$$

$$= \frac{a_{oj} + B^o_{oj} (1 + r_b)^t}{a_{oj} + B^o_{oj}}$$

Therefore the deficiency is all the greater, the greater the variability in the relationship between the exogenous and the endogenous sectors. Conceptually, the relationship between the exogenous and the endogenous sectors, here the basic and the local-service industries respectively, is most stable in a nodal regional delineation scheme and least stable in an arbitrary or administrative delineation scheme. Thus, the relatively closed trade area incorporated in the functional economic area concept would hypothetically permit less variance between exogenous and endogenous sectors than would regions composed of single counties or other groupings of counties based on other criteria. Empirical studies performed by the Regional Economics Division with respect to indices of industrial centralization and of relative regional specialization support the hypothesis that less variation in the basic-service relationships occurs in such nodal regions as OBE Economic Areas than in non-nodal regions comprised of

single counties or of homogeneous or arbitrary groupings of counties. 13 / Hence, the validity for projecting such cross-section relationships as basic-service interactions forward in time decreases as regional delineations depart from the nodal regional concept.

As a final step, the projections of income and employment in each industry were compared and reconciled. In most instances, study of the differences indicated that one of the two series had probably been projected incorrectly and changes were made accordingly. In cases where the original projections of income and employment seemed equally plausible, the two series were averaged to achieve compatibility.

The projection methodology chosen assumed that the future population of an area would reflect future economic opportunities. Accordingly, regional population is assumed to be a function of regional employment plus an adjustment to take account of the fact that selected areas attract an especially large number of retired persons.

13/ It must be borne in mind that for any given industrial sectoralization, increasing the size of the region has the tendency to decrease the variation among regions. Since increasing size actually means aggregating contiguous counties each with its own industrial mix, each county added to a regional configuration implies a discrete and not necessarily monotonic change. Nonetheless, counties lying in the hinterlands of urban centers, on the average, do exhibit the tendency toward reducing regional specialization when added to the urban centers. That is, when location quotients are the means for distributing portions of the industrial sectors among the basic and residentiary sectors we have:

$$\frac{E_{ij}/E_{oj}}{E_{io}/E_{oo}} = L_{ij}$$

$$B_{oj} = \sum_{i,L_{ij}>1} E_{ij}\left(1 - \frac{1}{L_{ij}}\right) = \sum_{i,\ L_{ij}>1}\left[E_{ij} - E_{io}\left(E_{oj}/E_{oo}\right)\right]$$

Therefore, regional specialization, B_{oj}/E_{oj}, tends to zero as regions are summed, $\sum_j (E_{oj}/E_{oo}) = 1$, and $E_{ij} - E_{io}$ tends toward zero. Thus, it is necessary to distinguish between decreases in the regional specialization index resulting solely from the size effects implicit in the mechanical aggrregation of counties and those decreases resulting from nodal regional delineation.

Historically, there has been some regional variation in the ratio of population to employment due to regional differences in unemployment and labor force participation rates. In the projections, regional differences in the labor force participation rates were changed according to their historical trends.

Population/employment ratios (P/E) for 1940, 1950, and 1960 for each area were studied to establish trends in labor force participation rates. Before adequate comparisons could be made, however, it was necessary to adjust the historical regional employment to full employment (96 percent of the labor force). On the national level, it has been established that the labor force participation rate increases with job opportunities. It has been roughly estimated that a decline of 2 in unemployment is accompanied by a rise of about 3 in employment; that is, each increase of 3 in the employment level is associated with an increase of 1 in the labor force. The full employment level for each area was estimated by making a similar adjustment in the labor force in each area. Regional differences in the P/E' ratio (E' = the adjusted employment) reflect regional differences in the labor force participation rates since the population-labor force ratio would be equal to 96 percent of the P/E ratio.

Comparison of area P/E' ratios for 1940, 1950, and 1960 revealed that in most areas the ratios have moved toward the national average.

The formula chosen for estimating population in region j, (P_j) for time t is:

$$P_j(t) = (1+r_j)\, P_j(t-1) + (E_{oj}(t) - e_j(t)\, E_{oj}(t-1))\, \frac{P_o(t)}{E_o(t)}$$

where r_j is a retirement migration coefficient calculated as

$$\frac{\text{net migrants age 60 and over from 1950 to 1960}}{\text{1950 population}} \times \frac{7-t}{6}$$

and e_j a full employment adjustment coefficient calculated for 1970 as $\frac{.96}{\text{1960 employment rate}}$ and for 1980-2020 as 1.0.

It is assumed that the ratio of the change in regional population to the change in regional employment is the same as the national P/E ratio. This allows the trend in the regional P/E ratios to move toward the national P/E ratio and at the same time preserves regional differences in the ratio. The regional P/E ratios will approach the national ratio but will never equal it. In addition, the formula allows for population change associated with retirement migration, which for a particular area could be either in-migration or out-migration, depending on the sign of the r coefficient.

The retirement migration coefficients were estimated from inter-area migration patterns in the 1950-1960 period. Net retirement migration for each area was estimated on the basis of the number of net migrants age 60 and over and not in the labor force, compiled from the Census of Population for the 1950-1960 period. 14/ To obtain the coefficient, the retirement migration was expressed as a percent of 1950 population.

REGIONAL PROJECTIONS OF PRODUCTION

Because of the rapid advances that have occurred in automation, measures such as employment and earnings tend to understate increases in the real volume of production. In order to eliminate the downward bias that might result from the use of employment or earnings to project future demands for water resource system outputs, a special measure of production was projected for economic areas.

From the censuses of manufactures for 1958 and 1963, estimates of value added in each major water-using industry were calculated for the Office of Business Economics' economic areas. Since these are combinations of multi-county units, it was necessary first to place Census value-added data on an individual county basis. Census regulations prohibiting disclosure of confidential data necessitated a substantial estimating job in order to prepare estimates for all counties.

The estimates of value-added in 1958 and 1963 in each major water-using industry were averaged to derive a first approximation of value-added in 1960 by OBE area. These 1960 first approximations were used to allocate to the economic areas the national totals of gross product originating in the corresponding industries in 1960. Division of these aggregates by employment, by area and by industry, yielded the averages shown in table B-2 for 1960. Each area's average was extrapolated arithmetically by decade from 1960 to 2020 by changes in the national average in the corresponding industry. Use of arithmetic extrapolation causes relative convergence of the area averages toward that of the Nation, a phenomenon that has characterized most economic series in the past.

14/ Data for in-migration and out-migration are given for each county by age group in Net Migration of the Population, 1950-60 by Age, Sex, and Color, Gladys K. Bowles and James D. Tarver, U. S. Department of Agriculture, 1965.

To the extent that the 1960 area differences in the averages reflected productivity differences within a detailed industry this convergence undoubtedly is realistic. To the extent that the 1960 differences reflect different mixes of industry at a more detailed level of industry classification (3- or 4-digit) the calculated convergence introduces an error into the projected trend. Such error, however, will be less than that arising from use of either earnings or employment.

CONVERSION TO WATER RESOURCE PLANNING AREAS

The foregoing exposition has developed the method used in making projections for the 167 functional economic areas. The final step involved conversion of the projections into those for water resource planning areas.

Since planning area boundaries seldom coincide with those of functional economic areas, it was necessary to break the functional areas into parts which could be reassembled into planning areas. This is a simple matter geographically. For projection purposes, however, it was necessary to relate each planning area part to the functional economic area which contained it, in terms of its share of the variable in question over the historical period.

The percent share trends which were generally quite stable were projected, and the projected percent shares were then applied to the appropriate functional economic area projections to obtain corresponding segments of planning area projections. As a final step the projections for the planning area segments were assembled into projections for planning areas.

The basic assumption embodied in the regional projections is that trends will be continued into the future until altered by external forces. Extension of trends does not necessarily mean continuation at a constant rate of change. Careful analysis of a trend often reveals that it is curvilinear rather than linear. In such cases, the extension is a curvilinear one. External forces that may alter trends include the depletion or discovery of exploitable resources; the imposition or removal of economic hindrances or stimuli in the form of laws, customs, institutional practices; the correction of imbalances in an area's economic structure; and the tendency for marginal returns to the factors of production to converge toward equality among areas.

ASSUMPTION REGARDING WATER AVAILABILITY

For water resource planning purposes, the assumptions underlying the projection method used yield what is essentially a "base line" projection. That is, no explicit account has been taken of the water resource endowments of the economic or water resource planning areas. The assumption is that water will play the same role in

stimulating or depressing economic growth in the area in the future as it has in the past. To the extent that past growth has been limited by lack of water resources, there is an implicit limitation on future growth traceable to a water shortage. In cases where water resource limitations have not yet been, but are about to be felt, the projection would be too high. In these cases the areas must recognize the disparity between growth potential free of the water resource restriction (projected here) and the actual growth prospect which may obtain if additional water resources are not found. Such awareness must stem from studies made in the field in which economic projections are translated into demand for water resource system outputs.

SECTION IV. OBE ECONOMIC AREAS - MEASURES OF OUTPUT

This section presents measures of output per employee in selected industries.

To estimate industrial water use and waste production, a measure of industrial activity in an area is essential. Since a regional measure of output in physical terms is not feasible, proxy measures must be substituted. Employment and earnings can serve as proxy measures, but each has its limitations because of the changing relationship over time between output and earnings and between output and employment. Earnings is a better proxy measure than employment because it recognizes labor's share in productivity gains. It does not reflect increased output due to the substitution of capital for labor in the production process. Accordingly, in those industries characterized by increasing automation or by an increasing ratio of capital to labor, use of earnings or employment as an indicator of output would yield a downward bias.

The estimates of "Economic Production Per Employee" presented in the following tables provide a basis for estimating indices of output for specified industries which may impinge heavily on the water environment. The average values shown in the following tables when multiplied by projected employment in corresponding industries and areas yield measures of output. Per worker averages are shown in the tables rather than aggregates so that users of the data can compute measures of production for the economic areas or their subdivisions.

The productivity measures are presented for the OBE Economic Areas as shown on the map, Figure B-1. Disaggregation of the measures to the water resource planning areas is not feasible with currently available data. To estimate output for the water resource planning areas, select the values for the most nearly corresponding economic area.

It should be noted that it is quite possible that these figures fail to measure correctly regional differences in trends of output. By using reliable national measures of production modified roughly to catch differences in regional trends an otherwise certain downward bias in area data has been avoided. Until such time as studies can be made to measure precisely trends in the relationship of water use and earnings or employment by industry, use of these rough measures of output will provide a more accurate measure of total water requirements than would the use of earnings or employment alone.

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

	1960	1970	1980	1990	2000	2010	2020
FOOD	8,145	11,246	15,550	20,571	27,190	36,300	48,943
TEXTILES	4,463	7,214	10,782	15,575	22,541	32,299	46,123
PAPER	8,957	11,762	14,698	18,168	22,643	28,134	35,396
CHEMICALS	12,166	19,221	29,229	44,082	71,058	100,825	136,290
PETROLEUM	11,896	24,946	46,620	86,179	159,563	284,504	507,084
PRIMARY METALS	9,433	13,318	17,444	22,126	27,781	35,122	45,457

OBE ECONOMIC AREA 001 BANGOR, MAINE 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,312	10,413	14,717	19,738	26,357	35,467	48,110
TEXTILES	3,880	6,631	10,199	14,992	21,958	31,716	45,540
PAPER	9,451	12,256	15,192	18,662	23,137	28,628	35,890
CHEMICALS	28,926	35,981	45,989	60,842	87,818	117,585	153,050

OBE ECONOMIC AREA 002 PORTLAND, MAINE 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,533	9,634	13,938	18,959	25,578	34,688	47,331
TEXTILES	3,798	6,549	10,117	14,910	21,876	31,634	45,458
PAPER	9,105	11,910	14,846	18,316	22,791	28,282	35,544
CHEMICALS	6,483	13,538	23,546	38,399	65,375	95,142	130,607
PRIMARY METALS	3,462	7,347	11,473	16,155	21,810	29,151	39,486

OBE ECONOMIC AREA 003 BURLINGTON, VERMONT 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,957	10,058	14,362	19,383	26,002	35,112	47,755
TEXTILES	5,037	7,788	11,356	16,149	23,115	32,873	46,697
PAPER	7,007	9,812	12,748	16,218	20,693	26,184	33,446
CHEMICALS	6,585	13,640	23,648	38,501	65,477	95,244	130,709
PRIMARY METALS	6,891	10,776	14,902	19,584	25,239	32,580	42,915

OBE ECONOMIC AREA 004 BOSTON, MASSACHUSETTS 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,952	10,053	14,357	19,378	25,997	35,107	47,750
TEXTILES	4,602	7,353	10,921	15,714	22,680	32,438	46,262
PAPER	7,365	10,170	13,106	16,576	21,051	26,542	33,804
CHEMICALS	9,232	16,287	26,295	41,148	68,124	97,891	133,356
PETROLEUM	7,573	20,623	42,297	81,856	155,240	280,181	502,761
PRIMARY METALS	9,322	13,207	17,333	22,015	27,670	35,011	45,346

OBE ECONOMIC AREA 005 SPRINGFIELD-HARTFORD, CONN. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,958	11,059	15,363	20,384	27,003	36,113	48,756
TEXTILES	5,514	8,265	11,833	16,626	23,592	33,350	47,174
PAPER	8,048	10,853	13,789	17,259	21,734	27,225	34,487
CHEMICALS	10,760	17,815	27,823	42,676	69,652	99,419	134,884
PETROLEUM	7,877	20,927	42,601	82,160	155,544	280,485	503,065
PRIMARY METALS	9,642	13,527	17,653	22,335	27,990	35,331	45,666

OBE ECONOMIC AREA 006 ALBANY, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,543	11,644	15,948	20,969	27,588	36,698	49,341
TEXTILES	4,372	7,123	10,691	15,484	22,450	32,208	46,032
PAPER	8,998	11,803	14,739	18,209	22,684	28,175	35,437
CHEMICALS	16,137	23,192	33,200	48,053	75,029	104,796	140,261
PETROLEUM	8,983	22,033	43,707	83,266	156,650	281,591	504,171
PRIMARY METALS	9,820	13,705	17,831	22,513	28,168	35,509	45,844

OBE ECONOMIC AREA 007 PLATTSBURGH, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,723	9,824	14,128	19,149	25,768	34,878	47,521
PAPER	8,898	11,703	14,639	18,109	22,584	28,075	35,337
CHEMICALS	19,589	26,644	36,652	51,505	78,481	108,248	143,713
PRIMARY METALS	14,136	18,021	22,147	26,829	32,484	39,825	50,160

OBE ECONOMIC AREA 008 SYRACUSE-UTICA, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,903	12,004	16,308	21,329	27,948	37,058	49,701
TEXTILES	4,637	7,388	10,956	15,749	22,715	32,473	46,297
PAPER	7,150	9,955	12,891	16,361	20,836	26,327	33,589
CHEMICALS	11,188	18,243	28,251	43,104	70,080	99,847	135,312
PETROLEUM	6,613	19,663	41,337	80,896	154,280	279,221	501,801
PRIMARY METALS	9,445	13,330	17,456	22,138	27,793	35,134	45,469

OBE ECONOMIC AREA 009 ROCHESTER, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	10,088	13,189	17,493	22,514	29,133	38,243	50,886
TEXTILES	5,361	8,112	11,680	16,473	23,439	33,197	47,021
PAPER	8,136	10,941	13,877	17,347	21,822	27,313	34,575
CHEMICALS	9,860	16,915	26,923	41,776	68,752	98,519	133,984
PRIMARY METALS	7,372	11,257	15,383	20,065	25,720	33,061	43,396

OBE ECONOMIC AREA 010 BUFFALO, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,905	12,006	16,310	21,331	27,950	37,060	49,703
TEXTILES	4,670	7,421	10,989	15,782	22,748	32,506	46,330
PAPER	8,980	11,785	14,721	18,191	22,666	28,157	35,419
CHEMICALS	9,334	16,389	26,397	41,250	68,226	97,993	133,458
PETROLEUM	12,377	25,427	47,101	86,660	160,044	284,985	507,565
PRIMARY METALS	9,036	12,921	17,047	21,729	27,384	34,725	45,060

OBE ECONOMIC AREA 011 ERIE, PENNSYLVANIA 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,910	11,011	15,315	20,336	26,955	36,065	48,708
PAPER	11,029	13,834	16,770	20,240	24,715	30,206	37,468
CHEMICALS	5,426	12,481	22,489	37,342	64,318	94,085	129,550
PETROLEUM	11,960	25,010	46,684	86,243	159,627	284,568	507,148
PRIMARY METALS	8,560	12,445	16,571	21,253	26,908	34,249	44,584

OBE ECONOMIC AREA 012 WILLIAMSPORT, PA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	5,913	9,014	13,318	18,339	24,958	34,068	46,711
TEXTILES	4,358	7,109	10,677	15,470	22,436	32,194	46,018
PAPER	7,613	10,418	13,354	16,624	21,299	26,790	34,052
CHEMICALS	7,353	14,408	24,416	39,269	66,245	96,012	131,477
PRIMARY METALS	11,304	15,189	19,315	23,997	29,652	36,993	47,328

OBE ECONOMIC AREA 013 BINGHAMTON, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,920	11,021	15,325	20,346	26,965	36,075	48,718
TEXTILES	3,795	6,546	10,114	14,907	21,873	31,631	45,455
PAPER	15,181	17,986	20,922	24,392	28,867	34,358	41,620
CHEMICALS	10,873	17,928	27,936	42,789	69,765	99,532	134,997
PRIMARY METALS	10,004	13,889	18,015	22,697	28,352	35,693	46,028

OBE ECONOMIC AREA 014 NEW YORK, N.Y. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,546	11,647	15,951	20,972	27,591	36,701	49,344
TEXTILES	5,173	7,924	11,492	16,285	23,251	33,009	46,033
PAPER	8,574	11,379	14,315	17,785	22,260	27,751	35,013
CHEMICALS	12,701	19,756	29,764	44,617	71,593	101,360	136,825
PETROLEUM	7,519	20,569	42,243	81,802	155,186	280,127	502,707
PRIMARY METALS	8,452	12,337	16,463	21,145	26,800	34,141	44,476

OBE ECONOMIC AREA 015 SCRANTON-WILKES-BARRE, PA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	5,974	9,075	13,379	18,400	25,019	34,129	46,772
TEXTILES	4,444	7,195	10,763	15,556	22,522	32,280	46,104
PAPER	7,659	10,464	13,400	16,870	21,345	26,836	34,098
CHEMICALS	3,900	10,955	20,963	35,816	62,792	92,559	128,024
PRIMARY METALS	10,265	14,150	18,276	22,958	28,613	35,954	46,289

OBE ECONOMIC AREA 016 PHILADELPHIA-TRENTON-WILMINGTON 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,399	10,500	14,804	19,825	26,444	35,554	48,197
TEXTILES	5,014	7,765	11,333	16,126	23,092	32,850	46,674
PAPER	8,574	11,379	14,315	17,785	22,260	27,751	35,013
CHEMICALS	9,433	16,488	26,496	41,349	68,325	98,092	133,557
PETROLEUM	9,122	22,172	43,846	83,405	156,789	281,730	504,310
PRIMARY METALS	9,596	13,481	17,607	22,289	27,944	35,285	45,620

OBE ECONOMIC AREA 017 HARRISBURG-YORK-LANCASTER, PA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,997	12,098	16,402	21,423	28,042	37,152	49,795
TEXTILES	4,768	7,519	11,087	15,880	22,846	32,604	46,428
PAPER	7,941	10,746	13,682	17,152	21,627	27,118	34,380
CHEMICALS	8,491	15,546	25,554	40,407	67,383	97,150	132,615
PETROLEUM	9,755	22,805	44,479	84,038	157,422	282,363	504,943
PRIMARY METALS	7,917	11,802	15,928	20,610	26,265	33,606	43,941

OBE ECONOMIC AREA 018 WASHINGTON-BALTIMORE 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	8,912	12,013	16,317	21,338	27,957	37,067	49,710
TEXTILES	6,641	9,392	12,960	17,753	24,719	34,477	48,301
PAPER	9,056	11,861	14,797	18,267	22,742	28,233	35,495
CHEMICALS	11,981	19,036	29,044	43,697	70,873	100,640	136,105
PETROLEUM	6,537	19,587	41,261	80,820	154,204	279,145	501,725
PRIMARY METALS	10,124	14,009	18,135	22,817	28,472	35,813	46,148

OBE ECONOMIC AREA 019 STAUNTON-WINCHESTER, VA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,085	9,186	13,490	18,511	25,130	34,240	46,883
TEXTILES	6,132	8,883	12,451	17,244	24,210	33,968	47,792
PAPER	8,592	11,397	14,333	17,803	22,278	27,769	35,031
CHEMICALS	13,302	20,357	30,365	45,218	72,194	101,961	137,426

OBE ECONOMIC AREA 020 ROANOKE-LYNCHBURG, VA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	5,222	8,323	12,627	17,648	24,267	33,377	46,020
TEXTILES	2,940	5,691	9,259	14,052	21,018	30,776	44,600
PAPER	13,948	16,753	19,689	23,159	27,634	33,125	40,387
CHEMICALS	13,918	20,973	30,981	45,834	72,810	102,577	138,042
PRIMARY METALS	7,458	11,343	15,469	20,151	25,806	33,147	43,482

OBE ECONOMIC AREA 021 RICHMOND, VA. 03/05/68

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	7,788	10,889	15,193	20,214	26,833	35,943	48,586
TEXTILES	4,270	7,021	10,589	15,382	22,348	32,106	45,930
PAPER	6,332	9,137	12,073	15,543	20,018	25,509	32,771
CHEMICALS	11,576	18,631	28,639	43,492	70,468	100,235	135,700
PETROLEUM	11,898	24,948	46,622	86,181	159,565	284,506	507,086
PRIMARY METALS	7,577	11,462	15,588	20,270	25,925	33,266	43,601

TABLE B-2

ECONOMIC PRODUCTION PER EMPLOYEE
(1958 DOLLARS)

INDUSTRY	1960	1970	1980	1990	2000	2010	2020
FOOD	6,784	9,885	14,189	19,210	25,829	34,939	47,582
TEXTILES	2,982	5,733	9,301	14,094	21,060	30,818	44,642
PAPER	10,410	13,215	16,151	19,621	24,096	29,587	36,849
CHEMICALS	7,380	14,435	24,443	39,296	66,272	96,039	131,504
PETROLEUM	10,822	23,872	45,546	85,105	158,489	283,430	506,010
PRIMARY METALS	10,752	14,637	18,763	23,445	29,100	36,441	46,776

SECTION V. ECONOMIC AND DEMOGRAPHIC INFORMATION, HISTORICAL AND PROJECTED, FOR SPECIFIED AREAS

This section contains brief descriptive material, historical and projected data on population, personal income, earnings and employment. The areas for which this information is given are as follows:

a. The United States (data only - no description).

b. The North Atlantic Hydrologic Region approximated with county boundaries. Two exceptions exist between the area used here (see map, Figure B-2) and that approved by NAR Study Coordinating Committee:

(1) Madison County, N.Y. has been omitted because it is part of the Syracuse SMSA, most of which is outside the basin (to separate it and include it in the NAR would require use of internal SMSA data which are not available).

(2) Campbell County, Va. has been included because it is part of the Lynchburg SMSA, the rest of which is in the basin.

c. New England; summation of the six states (data only).

d. Each state or portion of a state in the NAR (data only).

e. Specific groups of counties designated as Water Resources Planning Areas (WRPA's). (See map, Figure B-3 and listing of counties included in each WRPA, Table B-3, pages B-95 to B-101.)

Table B-4A contains the historical data on population, personal income, earnings and employment from 1929 to 1962. Table B-4B presents projections of the same items to 2020. (See pages B-102 to B-141.)

THE NORTH ATLANTIC REGION

The North Atlantic Region has been growing more slowly than the Nation as a whole, but even so the region remains a dominant force in the American economy by any major economic or demographic measure. Covering little more than 5 percent of the land area of the United States, the North Atlantic Region was the home of 26 percent of the people of the Nation in 1960, and provided jobs for about the same proportion of the Nation's workers. Residents of the area received 30 percent of the total personal income generated in the United States in that year which resulted in a per capita income 14 percent more than the national average.

The North Atlantic Region is also one of the most highly urbanized regions in the Nation. Its population density of 247 persons per square mile in 1960 was nearly five times the national rate of 51 persons per square mile. The range in area density was from 10 persons per square mile in interior Maine to 3,425 per square mile in the New York City metropolitan region.

There is an unusually large concentration of manufacturing, Federal Government, finance and service industries and a comparatively small amount of mining and farming activity in the North Atlantic Region. In 1962, nearly 60 percent of all earnings in the NAR came from the former group of industries, compared with less than 55 percent in the Nation. In contrast, earnings in the extractive industries comprised only 1-1/2 percent of the total in the region, compared with 6 percent in the United States. The relative importance of each of the other five -- mainly residentiary -- industries (trade, State and local government, transportation, construction, and other) is about the same in the region as it is in the Nation as a whole.

The importance of the North Atlantic Region in the Nation's economy is shown by the fact that in 1962, earnings in nine of the 11 industries in the NAR took a greater share of the United States' total than the population share of the region would call for. In that year, 27-1/2 percent of the population of the Nation lived in the NAR, but they earned more than 35 percent of total earnings from both the Federal Government and finance, and more than 30 percent of the total in services, manufacturing, and transportation. Earnings in the largely residentiary trade, State and local government, construction, and other industries were also above what the population weight would call for. In farming and in mining earnings were well below the population weight. In total, the region commanded more than 31 percent of all earnings in the Nation -- an advantage of more than 13 percent over the population weight.

It is only when we look at the rate of economic growth that the North Atlantic Region loses some of its economic luster. As one of the first settled, major points of entry and contact with the rest of the world, the North Atlantic Region got a substantial economic head

start on the rest of the country, becoming both the major market and the production center of the Nation. The diffusion of population across the continent, the evolution of transportation and other technological developments in industry have overcome much of the NAR's initial advantage, putting it in the position of an older, more mature region, whose lead is being reduced by younger regions now getting their major growth.

As a result -- whether measured by total personal income, per capita income, population, or total employment -- the North Atlantic Region has been growing more slowly than the Nation as a whole.

A comparison of rates of change in employment in the NAR with that in the entire United States via the employment shift analysis also reveals a region growing at a slower rate than the Nation, with a favorable industry mix but a regional competitive disadvantage. The gap between the United States and the NAR rate of growth in employment was smaller in the 1950-60 period than in the 1940-50 period. The NAR's industry mix advantage was somewhat smaller in the second period as was also its competitive disadvantage, all of which seems to indicate that as other regions of the country develop, their rates of growth are declining towards that of the older NAR, while industry mix is becoming more homogeneous, depriving the NAR of its industry mix advantage. On an individual industry basis, the NAR showed a large net relative change in employment over the entire 1940-60 period only in electrical and other machinery, and medical and other professional services and these were due to a favorable industry mix factor.

A look at the data projected for the NAR and the United States to the year 2020 reveals that the NAR is expected to continue at a slower rate of growth than the United States, but that the difference between these rates is expected to continue to decrease over the projection period. The rates of projected population and employment growth on average in the NAR are four-fifths the United States' rates; those for total personal income and earnings slightly higher. Employment in agriculture, forestry, and fishing is projected to decline at rates about one-third faster than the United States' rates, mining nearly ten times as fast. The projected growth rates in manufacturing employment in the NAR are less than one-half the United States' rates. Of the six industries defined as heavy water-using industries, none is projected to increase at rates faster than the United States' rates, although employment in the manufacture of food and kindred products is expected to decline at rates slower than the United States average. Petroleum and textiles employment, on the other hand, are projected to decline at faster rates -- textiles nearly ten times the United States' rate. Projected rates of growth in the other three heavy water-using industries range from one-half to three-quarters the United States' rates.

BANGOR, MAINE - WATER RESOURCE PLANNING AREA 0101

The Bangor WRPA is located in the northernmost corner of the North Atlantic Region and is a sparsely settled forest area. The population density, the lowest of the 23 areas, is less than one-tenth of the NAR average and has been growing more slowly than the NAR. The major city, Bangor, with a 1960 population of 39,500 is located in the southern end of the area. It was originally a port, and was the center of the Nation's lumber industry in the 1870's and is now a manufacturing center. The University of Maine is located nearby. There are seven other towns in the area with populations between 5,000 and 10,000. Two of them lie along Penobscot Bay between Bangor and the open sea. Three others fall in a line along the northeast boundary of the area.

Employment in the Bangor area is very heavily dependent upon the area's rich natural resources both directly and indirectly. There is an unusually high concentration of jobs in agriculture and in forestry and fisheries and in the manufacturing industries that process their commodities.

This concentration of employment in agriculture is four times the NAR average while in forestry and fishing it is ten times. This is the highest proportion of employment in this industry in the NAR. The share of total employment working in manufacturing is only two-thirds that of the NAR. However, the actual number of people working in factories in the area was almost 2-1/2 times the number in agriculture, forestry and fishing in 1960. Paper and allied products are the most significant manufacturing industry, employing nearly 8 percent of employment and accounting for one-quarter of all manufacturing employment. The lumber and wood products industry is a close second. This industry held first position until sometime in the 1950's. Food and textile products are also important. The fastest growing manufacturing industries in 1950-60 were chemicals, non-electrical machinery, printing and apparel.

The armed forces are also an unusually important supplier of jobs in the Bangor area with a concentration four times greater than in the NAR generally.

This is a relatively poor area with the lowest per capita income in the NAR, with per capita income only two-thirds of the national average, while for the NAR as a whole the figure is 114 percent. However, average income is expected to move towards the national average over the projected years, though remaining below, since population is projected to grow at only two-thirds the NAR rate while total personal income is expected to grow at a rate closer to the NAR rate. Manufacturing employment is projected to grow three times the NAR rate, this being one of only four areas in the NAR projected to increase its share of national manufacturing employment.

The Bangor area is projected to increase its share of the Nation's employment in all of the heavy water-using industries, except primary metals. Paper is projected to grow at twice the NAR rate in the first half of the projection period and 1-1/2 times the NAR rate in the latter half of the period, with food and textiles projected to increase relative to the NAR average. Agricultural employment is expected to decline faster than the NAR rate. The result is that total employment growth in the area is expected to remain below the NAR average.

PORTLAND, MAINE - WATER RESOURCE PLANNING AREA 0102

The Portland WRPA is composed of two quite diverse areas. The northern two-thirds is a rocky, hilly, cutover area, generally too rough for farming but with considerable second growth timber cover and many lakes. Population density in this portion of the area is quite low -- ten persons per square mile. Access to much of the area is restricted by the lack of paved roads. The southern third of the area is coastal and characterized by a succession of bays, estuaries, peninsulas and islands with an inland terrain interspersed with lakes and fast flowing streams. While generally less rugged than the northern section of the area, less than one-half is suitable for farming and only one-quarter is suitable for anything other than forage crops. Poor soils coupled with low farm productivity have limited the number of commercial farms. This, however, is the most urbanized portion of the State of Maine with 13 cities having a population of more than 10,000 in 1960. The SMSA's of Portland (120,655 in 1960) and Lewiston-Auburn (70,295 in 1960) are located in this area. Portland is one of the most important ports in New England with extensive fishing and shipping. It is also a manufacturing and commercial center for northern New England.

This is an old, established area in which the growth rate in employment has been only one-half that of the NAR in the two decades since 1940. Employment in agriculture, forestry and fishing has declined relative to the NAR, although the proportion of the labor force so employed was still 1-1/2 that of the NAR in 1960. The share of total employment in manufacturing is one-fifth above the NAR average. The largest manufacturing employment is in the miscellaneous and other manufacturing industry, in textiles (where the ratio to total employment is 3-1/4 times greater than that in the NAR), in paper, and lumber and wood products (both with ratios nearly five times that of the NAR). Each of these four major industries, however, is declining relative to the NAR. Other manufacturing industries of importance in the area are transportation equipment other than motor vehicles, food and kindred products, printing and publishing, non-electrical machinery and apparel. The fastest growing industries are electrical machinery, transportation equipment other than motor vehicles, fabricated metals and apparel. Largest employment in the area is in retail trade and professional services. Both grew faster than the total NAR experience during the 1940-50 and 1950-60 decades.

Although having an overall unfavorable industry mix relative to the rest of the NAR, the area does seem to have a substantial competitive (regional share) advantage in shipbuilding and related fabricated metals industries. Lesser advantages appear in food, paper, lumber and wood products, machinery, apparel and textile products. The lakes, mountains and forests of the area are a substantial recreation resource already being developed in such enterprises as the Sugarloaf Mountain and Farmington Ski areas. The recreation potential

is limited by the generally poor access to the area and the competition of the more developed recreational areas in neighboring New Hempshire and Vermont.

In terms of income, historically the area has been below the national average (about 15 percent in 1962). Although the area's population and employment are projected to continue to grow at a slower rate than the NAR, total personal income is expected to grow at approximately the same rate as the NAR. Thus, the relative per capita income of this area should improve, though still remaining below the national average.

MANCHESTER, NEW HAMPSHIRE - WATER RESOURCE PLANNING AREA 0103

The Manchester, New Hampshire, WRPA area has a population density of less than one-half that of the whole NAR. Most of its population is concentrated in the more urbanized southern portion of the area. The three major cities, of which Manchester is the center, are clustered on the Merrimack River. Manchester had a 1960 population of 95,500. Three other of the seven cities over 15,000 population in the area are located in close proximity, in a straight line along the lower Maine border. The remaining city, Laconia, is located in the more rural northern portion of the area. The more populated southern portion of the area has been growing, due in large part, to its proximity to Boston, Massachusetts. As increasing population densities force the activity centered on Boston further and further out from that economic center, this area will experience even faster growth.

The White Mountains and a series of lakes around Lake Winnipesaukee are the main characteristics of the northern portion of the area. These features give rise to that part of the area's most important economic activity -- recreation. The northern portion of the area has been growing more slowly than the southern or urbanized part. As might be expected in a recreation area, the proportion of employment in the service industries is high.

The share of total employment in manufacturing in the area is high, 25 percent above that of the NAR. Miscellaneous manufacturing accounts for the highest portion of total employment, followed by professional services, retail trade, construction, textiles and electrical machinery manufacturing. The concentration of employment in textiles is more than three times greater than the NAR average, in miscellaneous manufacturing 3-1/2 times greater, and in electrical machinery, 1-2/3 times greater. The rate of increase in total employment in the area in the 1950-60 period was 50 percent higher than that of the entire NAR. Fastest growing among industries in the 1950-60 decade were fabricated metals, electrical machinery, armed forces, other transportation equipment and nonelectrical machinery. Only electrical machinery and other transportation equipment, among the manufacturing industries, yielded an industry mix advantage in 1950-60. These same industries, plus nonelectrical machinery, fabricated metals and textiles, had a regional share advantage in the same period.

Population of the area constituted a declining proportion of U.S. population over the 1940-60 period. The region's share of national employment and total personal income also declined from 1940 to 1950 but increased in the 1950-60 decade.

Per capita income remained slightly below the national average. It is projected at the national average. The projected rates of

growth in population, employment and income are about 10 to 30 percent above the NAR average. This is one of three areas in the NAR which is expected to acquire a higher share of the Nation's population and income. Manufacturing employment is projected to grow 40 percent faster than the NAR with the concentration of manufacturing employment remaining 25 percent higher than the NAR as a whole. Textiles will continue to employ a share of total employment three times the NAR average. Primary metals is also projected to grow at two to five times the NAR rate. Agriculture is projected to decline at a rate slower than that of the NAR.

UPPER CONNECTICUT RIVER VALLEY - WATER RESOURCE PLANNING AREA 0104

The Upper Connecticut River Valley WRPA had a population density in 1960 of 32 people per square mile, the second lowest population density in the NAR. It is a rolling wooded area centered on the Upper Connecticut River Valley. The northern part of the area includes part of the White Mountains and is bordered on the west by the Green Mountains of Vermont. Much of the land area is in the White Mountain National Forest. The population is clustered in small urban places along the river valleys. There are only four cities with a population greater than 10,000, the largest of which is Berlin, New Hampshire (17,562 population in 1960). Dartmouth College is located in this area in Hanover, New Hampshire.

This has been a slow growth area with a rate of growth in employment about one-fifth that of the whole NAR in 1940-50 and one-half that of the NAR in 1950-60. Although limited by the mountainous nature of the terrain in much of the area, agriculture had provided the major employment in the area until 1960 when it became the fourth place industry. Despite the rapid decline in agricultural employment, the concentration of employment in agriculture was three times greater than the NAR average in 1960. The proportion of employment in manufacturing is also slightly above the NAR experience. The lumber and wood products industry and the paper industry, attracted by the wood and pulp resources of the area's forests and the power generated by its several rivers employ a substantial portion of the area's workers. Nonelectrical machinery with a concentration of three to four times the NAR average is next in importance. As elsewhere in New England, manufacturing activity tends to be concentrated in a few large firms.

The fastest growing industries in the area in the 1950-60 decade were armed forces, electrical machinery, printing, and nonelectrical machinery. Most of the area's slow growth in employment can be traced to its disadvantageous industry mix. Of its manufacturing industries only nonelectrical machinery, fabricated metals and printing and publishing were among the faster-than-average growth industries in the 1950-60 period and the advantage in these industries was very small. The degree of employment concentration that existed in agriculture, textiles and lumber and wood products worked to the area's disadvantage. The regional share, or competitive advantage appeared to be strongest in nonelectrical machinery with lesser advantages in textiles, miscellaneous manufacturing and printing and publishing. The area had a small competitive advantage in most industries in which it engaged. Only in business and repair services, lumber and wood products manufacturing, and agriculture did it have notable competitive disadvantages.

The area's share of national employment, population and total personal income is declining. Per capita income has been 15 percent or more below the national average, putting this area in the lower third among areas of the NAR in this respect.

Recreation-related activity is an important feature of the economy, since this area is very attractively endowed with facilities for both winter and summer recreation and is quite accessable to major population centers.

The projected rates of growth for the area remain below the NAR average with population projected at one-half the NAR rate and employment two-thirds the NAR rate, although income is projected to grow at just about the same rate as the entire NAR. Agricultural employment is expected to decline at a rate more rapid than the NAR. The manufacturing growth rate is expected to be closer to the NAR rate than is total employment. It is anticipated that employment in textiles will decline at a relatively slower rate and paper employment at a more rapid rate than the NAR average.

BURLINGTON-RUTLAND - WATER RESOURCE PLANNING AREA 0105

The Burlington-Rutland WRPA has a basic resort and recreation industry which is dependent on the Green Mountains in the center of the area and Lake Champlain which forms most of the western border. A diversified manufacturing industry and a rather high concentration of employment in agriculture, mainly dairying, are also characteristic of the area. It has one of the lower population densities in the NAR. There are four cities with populations of approximately 10,000, one with 20,000, and Burlington, Vermont, with a 1960 population of 36,000. This has been a stable area in which population growth has been slow in the past several decades -- one-half the NAR rate of growth in 1949-50 and one-fourth the NAR rate of growth in 1950-60.

The rate of growth in employment has been proportionately lower than the average rate of growth elsewhere in the NAR. The bulk of the mining activity in the area -- the quarrying of granite -- is centered around Barre, Vermont. The share of total employment working in agriculture in this area is the second highest of all areas in the NAR, nearly six times the NAR ratio.

The largest manufacturing employment is in the msicellaneous manufacturing and the lumber and wood products industries. In size of employment this follows the professional services, retail trade, agriculture and construction industries. Food and kindred products, fabricated metals, apparel, electrical and nonelectrical machinery, printing and publishing and paper and allied products are also important industries for employment, adding diversity to the area's economy. Fabricated metals, electrical machinery, primary metals, and paper and allied products are the fastest growing industries in the area, while miscellaneous manufacturing and lumber and wood products have been more stable in the number employed.

Most of the area's slower-than-average growth has been the result of its disadvantageous industry mix. This particular specialization of activities appears to be increasingly detrimental to the area. The degree of specialization in agriculture, textile mill products, mining and railroads were of particular disadvantage in 1950-60. Moderate regional advantages appeared only in the manufacture of fabricated metals and in retail trade in the 1950-60 decade in addition to a very small regional advantage in agriculture, mining, apparel, paper, primary metals and electrical machinery.

The per capita income of this area is only 80 percent of the national average. Despite future growth, this area is expected to command a declining share of the Nation's population, employment, and income. The manufacturing component of employment is expected to increase at a rate double the NAR average, but even this will not bring the manufacturing share of total employment to that of the NAR within the projected period. Projected agricultural employment will

continue to result in a share of total employment five times greater than the NAR average, and mining three times larger.

Employment is expected to equal the NAR rate of growth while population grows more slowly. These differing trends will result in a greater portion of the population being employed. At the projected rates of growth the per capita income position will change little.

BOSTON - WATER RESOURCE PLANNING AREA 0106

The Boston WRPA is primarily a coastal plain with numerous good harbors. It is the commercial, industrial, financial and cultural center of New England. In it are nine SMSA's with a combined population of more than 4-1/2 million people. Eighty-seven percent of the population of the area lives within the boundaries of one SMSA. This high degree of urbanization results in a population density which is the highest in the NAR outside of the New York City area.

The share of the total labor force working in the manufacturing industries is slightly higher than the NAR average. This manufacturing activity is quite diversified with some specialization occurring in the individual cities ringing Boston and the other SMSA's. The area as a whole shows a degree of specialization in miscellaneous manufacturing, electrical machinery, textiles, professional services, retail trade and construction. The rapidly expanding electrical machinery industry has surpassed the textile industry in numbers as the leading employer in the manufacturing sector. Other manufacturing industries which are major employers include nonelectrical machinery, apparel, food and kindred products, fabricated metals and printing and publishing.

Providence, Rhode Island, the second largest city in this area and the third most important port in New England, is located at the head of Narragansett Bay, 30 miles from the open sea. It was one of the earliest textile centers in the United States and remains highly specialized in this activity although it is developing a significant electrical and other machinery industry. It is a major jewelry manufacturer as well. Port activity today consists mostly of petroleum and coal receipts.

The area's third largest city, Worcester, Massachusetts, without a major river, waterfront or basic natural resource, also developed as a textile center and is one of the most highly industrialized cities in the NAR with nearly one-half its total employment in manufacturing. Nonelectrical machinery has now surpassed textiles as the largest employer. The Lawrence-Haverhill and Lowell SMSA's are specialized in the manufacture of woolen and cotton textiles; Brockton SMSA in shoes; New Bedford and Fall River SMSA's in textiles.

The Boston area has enjoyed a remarkable growth in technologically-oriented industries which have located here in response to, or as spinoffs of, the concentration of advanced education and research facilities. Among the colleges located in the area are Boston College, Boston University, Harvard, MIT, Northeastern University, Radcliffe, Tufts, Wellesley, Brown University, the University of Rhode Island, Clark University, College of the Holy Cross, several Massachusetts State colleges and numerous technical and other colleges.

The extensive coastal area provides innumerable resort and recreation sites including the well known Cape Cod, Nantucket Island and Newport areas.

Public administration and the armed forces employ a significant number of people in the area and both have been among the faster growing industries. Military establishments include the Naval War College at Newport, major naval bases at Boston and Newport, and several air bases. The fastest growing industries in the 1950-60 decade were electrical machinery, armed forces, other transportation equipment, fabricated metals and professional services.

This area has had a slower rate of growth in employment, population and income in recent years than the NAR average. This is reflected in a very slowly decreasing share of national totals. It has a declining industry mix advantage which appears to be compensated for by a declining regional share disadvantage. In the 1950-60 period only the electrical machinery and apparel industries reflected a strong competitive advantage in terms of employment growth. The armed forces, fabricated metals and primary metals had more moderate regional share advantages. Specialization in the textile industry was the source of both the largest industry mix and regional share disadvantage among economic activities of the area.

The people here have had a per capita income consistently above the national but not the NAR average. The projected rates of increase in population, employment and income for this area are all slightly below the projected NAR rates. Only in agriculture, forestry and fishing and in primary metals is this area's share of national employment projected to increase.

HARTFORD-SPRINGFIELD - WATER RESOURCE PLANNING AREA 0107

The Hartford-Springfield WRPA consists of the western half of the State of Massachusetts and the entire State of Connecticut. It is bisected by the Connecticut River and partially redivided by the Thames and Housatonic River. It is generally a quite densely populated area with a heavily urbanized, industrialized strip running along the shore of Long Island sound from New York City, and up the Quinnipiac, Naugatuck and Connecticut River valleys through central Connecticut into Massachusetts. There is, nevertheless, a considerable amount of rural area, most notably the scenic, wooded Berkshire Mountains in the western portion of the area. Seventy-three percent of the area's people live in the 11 SMSA's that are located within its borders.

This area is one of the fastest growing areas in the NAR, with a 1950-60 rate of growth in employment and population 50 percent above the NAR rate. The largest employers ranked by number of employees in 1960 is in professional services, retail trade, miscellaneous manufacturing, nonelectrical machinery, other transportation equipment, construction, finance, insurance and real estate, fabricated metals, and electrical machinery. Despite the rich cropland along the Connecticut River, the share of total employment in agriculture is below the NAR share. Tobacco -- the predominant crop -- and truck farming for the urban centers have increased the area's agricultural employment relative to the rest of the NAR. The flow of trade and power development along the several rivers of the area led to the early establishment of manufacturing activity in its cities. The concentration of employment in manufacturing is one-third higher than the NAR average. Textile manufacturing has lost its prominence as the leading source of manufacturing employment in 1940 to the manufacture of nonelectrical machinery and transportation equipment, excluding motor vehicles. These are the leading employers in the Hartford, Connecticut, SMSA where aircraft engines are the major product. Other manufactures include typewriters, firearms, hardware, precision machines, hand tools, cutlery, ball bearings, watches, clocks, and electrical appliances. Hartford, is also noted as an insurance center. The Bridgeport-New Haven portion of the area portion of the area produces helicopters and other airframe and engine parts, firearms, ammunition, sewing machines, locks, jewelry, precision instruments, and a wide variety of other metal and rubber products. Waterbury is the center of the Nation's copper and brass manufactures. New London-Groton-Norwich has a unique specialization in the building and maintenance of submarines. The southwestern portion of the area serves as a residential area for people working in New York City, attracting many of the City's higher income workers.

The transportation equipment, excluding motore vehicles, category is not only the largest source of manufacturing employment in the area but was also the fastest growing industry in 1950-60, followed

by the armed forces, construction, professional services, food and printing and publishing.

The area has the largest share of total employment engaged in the manufacture of fabricated metals in the NAR, the second largest in other transportation equipment and finance, insurance and real estate and third largest in electrical machinery.

The area has an increasing industry mix advantage, and the regional share disadvantage that existed in 1940-50 had become a strong regional share advantage by 1950-60. The degree of specialization in the manufacture of electrical machinery and transportation equipment, other than motor vehicles, is in large part responsible for the area's industry mix advantage while transportation equipment alone stands out with a regional share, or competitive advantage.

There are a number of well known institutions of higher learning in the area -- Amherst, Williams, Smith, Mount Holyoke, University of Massachusetts, Connecticut Wesleyan, Trinity, Yale, the University of Connecticut and several other State colleges.

Military establishments include the United States Coast Guard Academy and a naval submarine base located on the Thames River between Norwich and New London.

The area's share of national employment and population is increasing. Its share of the Nation's total personal income declined between 1929 and 1950 but showed a slight increase from 1950 to 1962. The per capita income of this area is well above the national average - 42 percent above in 1940 and 20 percent above in 1962.

The decline in employment in agriculture, forestry and fishing and in mining is projected at a slower rate than for the NAR as a whole. Manufacturing employment is expected to increase at about one-half the NAR rate. Of the heavy water-using industries, textile employment is projected to decline at a faster rate than the NAR, food slower, while paper and chemicals are projected to grow more rapidly than in the NAR as a whole.

Generally future rates of growth in population and employment are expected to be slightly above the NAR rates and to move from slightly below to slightly above in income.

PLATTSBURGH, NEW YORK - WATER RESOURCE PLANNING AREA 0108

The Plattsburgh, New York, WRPA is somewhat isolated from the mainstreams of economic activity by Lake Champlain which bounds it on the east, Canada and the St. Lawrence River on the north and the Adirondack Forest Preserve to the south. A major portion of this area does in fact lie inside the forest preserve, and is consequently undeveloped. The inhabited portion of the area is primarily in the northern edge on the lowlands along the St. Lawrence River and the Canadian border to Plattsburgh on Lake Champlain. There are six medium-sized cities (15,000 population) in this strip, the largest of which is Plattsburgh (1960 population 20,172).

This is a slow growth area. Employment increased at a rate only one-third that of the NAR in 1940-50 and three-fourths the NAR rate in 1950-60. Growth in population and income has been proportionately slow. All three measures show a tendency to converge toward the NAR rate.

Agriculture was the principal occupation in this area until sometime between 1950 and 1960. The area still has the third largest share of total employment in agriculture in the NAR (four times the NAR portion). Farms are highly specialized in dairying although apples and potatoes are also important. Highest manufacturing employment is in the primary metals industry. This activity is concentrated in a single aluminum plant at Massena. Paper and lumber and wood products are both important manufacturing activities. Both are declining in employment at a rate faster than the NAR although the proportion of the labor force working in the paper industry is one of the highest in the NAR. In nearly every other manufacturing category, this area ranks close to the bottom of the NAR.

The proportion of total employment in mining on the other hand is the highest in the NAR and is an increasing number, contrary to the general trend. Iron ore, zinc, lead and talc are among the minerals mined. Other activities in which the area has high concentrations of employment are service industries related to the important recreation and resort activities of the area. Lake Champlain, the Adirondack Forest Preserve and the St. Lawrence River, which surround the area, are all prime recreation areas. A change in management philosophy from keeping the area "forever wild" to one of developing greater user facilities and a possible transfer to national park status could well mean greatly increased recreation use of the Adirondack area. The area ranks low in transportation, business services and trade except for retail trade. Here, especially eating and drinking places rank very high.

Although the St. Lawrence Seaway provides the possibility of increased economic activity (as in the case of the aluminum plant at Massena), the northern New York border on the seaway is at the

present time merely a transit region with few cargoes originating or terminating there.

The industry mix disadvantage which exists in the area results from its specialization in agriculture, mining and various service activities. The regional share advantage which developed in the 1950 decade can be traced to growth in the armed forces which is the fifth largest employer in the area (a SAC air base at Plattsburgh) and mining.

Per capita income has remained 20 percent below the national average and was only 60 percent of the per capita income in the most prosperous area of the NAR in 1960. This position is expected to improve as the rate of increase in total personal income is not projected to be as far below the NAR rate as the population rate. The rate of employment increase is also expected to be below the NAR average, but faster than the rate of population change. Manufacturing employment is expected to change at a relatively faster rate than total employment. Of the water-using industries of significance in the area, only paper fares better than the NAR average -- declining more slowly.

ALBANY-TROY-SCHENECTADY - WATER RESOURCE PLANNING AREA 0109

The population of the Albany-Troy-Schenectady WRPA is concentrated at the confluence of the Mohawk and Hudson Rivers with urbanization extending up the Hudson Valley and west along the Mohawk. The population density, though more than twice the national density, is less than one-half the NAR. Although two-thirds of the people of the area live in the Albany-Troy-Schenectady SMSA, there are three other cities in the area with populations between 10,000 and 20,000. The northern half of the area is in the Adirondack Forest Preserve, a sparsely inhabited, wilderness, recreation area.

Employment in manufacturing in the area is slightly higher than in the total NAR. Electrical machinery is three times the NAR share; paper is 2-1/2 times the NAR share; and textiles and apparel are twice the NAR share. However, in the 1950-60 decade only apparel, lumber, fabricated metals and motor vehicles and equipment had a faster rate of growth than the NAR rate.

The largest number of employees is found in trade, public administration, and services followed by electrical machinery, apparel, textiles and food. Several towns specialize in the manufacture of specific products as for example glove making in Gloversville and Johnstown. Albany, a seaport, is the State capital and commercial center for a large area. The area's early growth and much of its present importance is based on its position as a transshipment point as Troy is the eastern terminus of the New York State Barge Canal. In recent years the Canal has suffered considerably from competition of other forms of transportation.

Measured in terms of employment, this area grew only three-fourths as fast as the NAR average in the 1940-50 decade and less than one-fifth as fast in the 1950-60 period. The industry mix disadvantage, resulting from the degree of specialization in agriculture, textiles and transportation, is barely offset by the degree of employment in manufacturing, electrical machinery, and transportation equipment and in professional services and public administration. The area, however, has a large regional share disadvantage in these same industries - electrical machinery and transportation equipment. Only apparel, fabricated metals and professional services demonstrated a regional share advantage in the 1950-60 period.

In the past this has been an above average income area but recently per capita income has fallen to the national average where it is expected to remain.

Projected rates of change in population, employment and income are just below the NAR average. The projected rates of growth in manufacturing employment are lower than the NAR rate with only

chemicals and primary metals growing at faster rates. Only in these two industries is the area expected to increase its share of national employment. In all others a declining share is expected.

SYRACUSE-UTICA - WATER RESOURCE PLANNING AREA 0110

The Syracuse-Utica WRPA in the north central part of New York State extends from the Finger Lakes on the southwest to Lake Ontario and the St. Lawrence River on the north. It is bounded by the Adirondack Forest Preserve on the east. Through its center runs the Mohawk River Valley which is the focal point of the population and economic activity of the area.

Although the population density here is only one-half that of the entire NAR, the area contains two SMSA's of 300,000 and 500,000 population size and two more cities over 30,000 population.

Location on the Mohawk transportation corridor was the basic reason for origin of most towns in the area. The largest, Syracuse, also owes its early importance to being one of the major sources of salt in early North America. This in turn was one of the factors in the opening of the Erie Canal, which further strengthened Syracuse's position as a transportation and commercial center. Syracuse's growth performance has been better than the other large New York urban areas largely on the strength of its position as a trade and service center for upstate New York. Having skipped the usual textile stage of industrial growth, Syracuse has a diversified manufacturing industry. Utica, also on the transportation corridor, is now undergoing a change from nondurable goods manufacture (principally knit goods) to durable goods manufacture. Its companion city, Rome, is highly dependent on Griffiss Air Force Base for its recent growth and current economic well-being, but it also produces copper goods.

This area is slightly more industrialized than the NAR as a whole. Largest manufacturing employment in the area is in electrical and nonelectrical machinery industries. There is also large employment in the food, fabricated metals, primary metals and paper industries. Professional services, public administration, retail trade, wholesale trade and finance, insurance and real estate are also important industries with regard to employment.

In terms of employment, this is not a fast growth area although the 1950-60 rate of change was only a very little below the NAR average, while the 1940-50 rate was only three-fourths the NAR rate. A moderate industry mix disadvantage persists mainly because of the continuing importance of agriculture in the area. A regional share disadvantage that existed in 1940-50 had all but disappeared by 1950-60, thanks largely to the growth in employment in public administration. In general, the pace of economic activity appears to be quickening after many years of near stagnation.

Syracuse and Colgate Universities are the major institutions of higher education in the area.

Projected rates of growth that are about the same as the NAR rate for population and employment and slightly higher for total personal income will bring per capita income close to the national average. Growth in manufacturing employment is expected to be faster than the NAR average. It is expected that this area will have a declining share of employment, population and income in the Nation.

ROCHESTER-GENESEE - WATER RESOURCE PLANNING AREA 0111

The Rochester-Genesee WRPA is cast around the Genesee River in western New York State. It is bordered by Lake Ontario on the north, Pennsylvania on the south, the Finger Lakes to the east and the Buffalo metropolitan area to the west.

Agriculture remains relatively more important here than in the NAR as a whole. Extensive vineyards, orchards and vegetable acreages are to be found here. A higher percentage of the work force here is engaged in manufacturing and a smaller percentage in service industries than in the NAR generally. Rochester SMSA is the center of economic activity in the area. Nearly one-third of the manufacturing labor force of Rochester works for a single company producing photographic equipment and supplies. The second largest manufacturing industry is electrical and other machinery, followed by food, apparel and printing and publishing. Using power from the Genesee River, canal and lake transportation, Rochester developed first as a flour milling center, later as a textile center and now as a center for highly skilled manufacturing activity. Rochester dominates this area to a greater extent than do the central cities of most other areas. There are however three other cities of about 20,000 population in the area, Batavia, a manufacturing town, Geneva, more a resort area service town, and Olean.

Growth of the area based on photographic equipment manufacture has been good, but has slowed in the past two decades. In 1940-50 its employment growth rate was three-quarters the NAR average, in 1950-60, 20 percent below the NAR. The area has a small, declining industry mix disadvantage as a result of the remaining importance of agriculture. It also has a competitive disadvantage. However, it did show a regional advantage in motor vehicles equipment and printing and publishing in the 1950-60 period.

Per capita income in the area has been about the national average and is expected to continue at about the national average.

Population, employment and income are projected to continue growing at about the same rate as the NAR average. Growth in manufacturing employment, however, is expected to be nearly twice the NAR rate while in agriculture and mining the area is expected to decline relative to the average. The concentration of employment in manufacturing industries within the area is projected to remain 1-1/2 times greater than the overall NAR concentration in this sector. The concentration of employment in agriculture is expected to approach the NAR average. A decreasing share of national population, employment and income is projected for the area.

BINGHAMTON-ELMIRA - WATER RESOURCE PLANNING AREA 0112

The Binghamton-Elmira WRPA is a rolling plateau lying between the Mohawk River in central New York and the Appalachian Mountains of northern Pennsylvania. It has a relatively low population density with just seven towns of over 10,000 population. Binghamton SMSA located at the juncture of the Susquehanna and Chenango Rivers is the economic center of the area with Elmira a secondary center.

Agriculture's share of employment remains nearly four times the NAR ratio. Dairying is the main farm activity with orchards, vineyards and vegetables important in the northern part of the area. Specialization in manufacturing is one-fifth higher than in the NAR. The largest manufacturing employment in the area is found in the nonelectrical machinery industry. The production of shoes is second in importance, followed closely by electrical machinery and glass manufacture. Other important industries include photographic supplies, aircraft training devices and furniture. Electrical machinery was the fastest growing in employment of the major manufacturing industries in the 1950-60 period.

Although growing at a higher rate than the anthracite coal region immediately to the south, this area declined relative to the NAR as a whole in both the 1940-50 and 1950-60 decades.

The area's industry mix disadvantage which has been due mainly to its degree of specialization in agriculture, textiles and railroad transportation, was considerably smaller in 1950-60 than 1940-50. A regional share advantage existed in 1950-60 in both electrical and nonelectrical machinery; in the manufacture of transportation equipment, other than motor vehicles; and in fabricated metals. A small net disadvantage resulted from large regional disadvantages in miscellaneous manufacturing (leather and glass) and food and kindred products.

Cornell University is a major educational center in the area. In addition there are several smaller colleges.

Per capita income in the area has fallen to about 8 percent below the national average. The projected rates of growth for this area, however, are slightly above the NAR average rates in population, employment and income with per capita income projected to approach the national average. The faster-than-average (two times the NAR) rate of growth projected in manufacturing employment indicates the maintenance of an employment concentration in this sector 50 percent greater than the NAR. Although agricultural employment is projected to decline at a faster rate than the NAR average, concentration in this industry is expected to remain nearly three times that of the NAR.

ALLENTOWN-BETHLEHEM-EASTON - WATER RESOURCE PLANNING AREA 0113

The Allentown-Bethlehem-Easton WRPA stretches from the anthracite region of east central Pennsylvania through the Pocono Mountain resort areas of eastern Pennsylvania and northwestern New Jersey and from the Catskill Mountain Forest Preserve in southern New York to the Hudson River. More than one-half the people of the area live in the two SMSA's of Allentown-Bethlehem-Easton strung out along the Lehigh River Valley and Reading in the Schuylkill River Valley. Much of the area still remains rural in character since it is divided by a series of ridges and valleys of the Appalachian system.

The Pennsylvania portion of the area, which was settled largely by German immigrants, became highly industrialized very early in its development, specializing in iron and steel and textile production. The proportion of the area's workers employed in manufacturing in 1960 was 43 percent, one-third higher than in the NAR generally. The manufacturing industry employing the largest number of people was apparel, followed by primary metals, textiles, nonelectric and electric machinery. The degree of employment concentration in textiles and primary metals was respectively 2-1/2 and five times greater than in the NAR as a whole.

Mining remains important in the southern end of the area which is in the Pennsylvania anthracite coal region and for the entire area is five times greater than in the NAR. However, employment in this industry declined at a faster rate than it did in the NAR in the 1950-60 period. This area was also an early producer of cement, based on its large deposits of top quality stone and remains an important source today.

Fertile soils and the nearby urban markets make farming a generally prosperous undertaking in the area, with the result that the proportion of the labor force working in agriculture is greater than the NAR average.

The pattern of employment also indicates the importance of the recreation industry in the central portion of the area, with a higher proportion of employment in hotels and other personal services than the NAR normally while employment in services generally lags behind the NAR average. In the eastern end of the area on the Hudson River, manufacturing provides the principal employment with textiles and leather goods predominant.

Employment in the area grew at the NAR rate in the 1940-50 period but at less than one-half the NAR rate in 1950-60. Its industry mix disadvantage increased between the same two periods mostly because of the specialization in textiles, mining, agriculture, apparel, railroad transportation and hotels and other personal services. The competitive advantage was positive in both periods

and particularly strong in electrical machinery, nonelectrical machinery and apparel.

Per capita income has been slightly below the national average but is projected to rise to the national average as the projected rate of increase in income is closer to the NAR rate than is the projected rate of increase in either population or employment (both are about two-thirds the NAR rate). Projected employment in both agriculture and mining is declining more rapidly than in the NAR as a whole. Manufacturing employment is projected to grow more rapidly than the NAR average in the first part of the projected period and about the same as the NAR average in the latter part of the period. Employment in food, textiles and primary metals is projected to decline at a faster rate than the NAR average. Employment in chemicals is projected to increase at a faster-than-average rate.

NEW YORK CITY - WATER RESOURCE PLANNING AREA 0114

The New York City WRPA is the economic center of the NAR and to a considerable degree of the entire Nation. Clustered around this port at the mouth of the Hudson River are one-third of all the people living in the NAR, and 8 percent of the population of the United States. The population density of 2,464 people per square mile in this area is ten times greater than the NAR average and nearly 50 times the national population density. Ninety-two percent of the population lives in one of the four SMSA's of the area. Only six counties in the area, those lying to the north along the Hudson River and to the south, are not presently within the boundaries of an SMSA.

New York's early development was linked directly to its harbor facilities. It still remains the Nation's most important port and is unique in the variety of goods passing over its docks. As in most ports, however, the major part of the tonnage handled is bulk materials, particularly petroleum, coal and construction materials. New York is also a railroad and air transportation center, and is in every respect the foreign trade center of the United States. Since it is the entry point for most immigrants to this country, the foreign-born remain an important element in the area's population.

New York City has the Nation's largest concentration of financial, trade, professional, business and communications services. Manufacturing however provides the major employment. Apparel is the largest manufacturing employer followed by miscellaneous manufacturing, electrical machinery, printing and publishing, food, chemicals and nonelectrical machinery. The list of goods manufactured in the area is long and varied with a preponderance of consumer nondurable goods.

The area's employment grew just slightly slower than the NAR average in the 1940-50 period and at an equal rate in 1950-60. Its strong and growing industry mix advantage originates in its specialization in professional services, electrical machinery, finance, insurance and real estate, manufacture of transportation equipment, other than motor vehicles, printing and publishing, business and repair services, public administration, food and kindred products and fabricated metals. The area has a declining regional share disadvantage. Industries displaying the largest regional share disadvantage in the 1950-60 period were apparel, professional services and trade. The only industries displaying strong regional share or competitive advantages were public administration, business and repair services, textiles and transportation.

Per capita income has been substantially above the national average, though declining slowly toward this average. There are

more than a dozen universities and colleges in the area. Public administration, federal as well as local, is also a part of this widely diversified economy.

The area is projected to grow at just under the NAR rate of growth in employment, population and income and is expected to constitute a declining portion of the United States. Per capita income is expected to remain above but to decline toward the national average.

WILLIAMSPORT - WATER RESOURCE PLANNING AREA 0115

The Williamsport WRPA is a sparsely settled, heavily wooded series of northeast-southwest trending valleys and ridges in the Appalachian Mountains. It has just four cities over 10,000 population, the largest of which, Williamsport, had a population of 41,500 in 1960. The hilly terrain and poor soils limit farming activity although the proportion of the work force employed in agriculture is nearly twice the NAR proportion. The proportion of employment in mining remained ten times the NAR share in 1960, although the number so employed had declined rapidly since 1950. The relative concentration of employment in railroad transportation has been in support of this coal mining activity.

The share of employment in manufacturing is also slightly above the NAR average. Electrical machinery and transportation equipment (small aircraft) are the two largest employers closely followed by apparel and lumber products. Primary metals, paper, food, and textiles are also important. Employment in transportation equipment, other than motor vehicles, printing, chemicals and apparel has grown the fastest over the past two decades. The area has suffered considerable unemployment over the past decade. The availability of this unemployed labor pool is in part responsible for the establishment and growth of other industries such as the apparel industry.

Of the heavy water-using industries, textiles, paper and primary metals all had greater proportions of employment in 1960 than the NAR average. Only chemicals and primary metals, however, have shown growth.

Measured by employment change, the area grew at a rate 50 percent faster than the NAR in 1940-50, but only one-fourth as fast as the NAR rate in 1950-60. It had an industry mix disadvantage in both periods based mainly on its large share of employment in mining and agriculture and also, to a lesser degree, upon its employment in textiles and railroads. The area's competitive advantage, substantial in 1940-50, nearly disappeared in 1950-60 mainly because of the declining rate of employment growth in electrical machinery, a fast growing industry nationally. A substantial competitive advantage remains only in transportation equipment, other than motor vehicles.

Pennsylvania State University is the largest of several colleges in the area and the main economic activity of the second larges city in the area.

The per capita income in the area has been just slightly more than 80 percent of the national average while per worker earnings have been somewhat closer to the national average.

Population is projected to increase at a rate just below the NAR average, employment at the NAR rate and total personal income just slightly faster than the NAR average. This will result in per capita income moving towards the national average. Agriculture and mining are expected to lose employment at a faster rate than the NAR average while employment in manufacturing is projected to grow at just about the same rate as the NAR. Chemicals and primary metals are projected at high relative rates of increase; textiles and food at relatively slow rates of decline.

YORK-LANCASTER-HARRISBURG - WATER RESOURCE PLANNING AREA 0116

The York-Lancaster-Harrisburg WRPA includes most of southeastern Pennsylvania and a corridor along the Susquehanna River to the northeastern corner of the State. It is comprised of three somewhat diverse pieces.

The western portion of the area, with the Altoona SMSA as its center, is a rather sparsely inhabited, mountainous area. Altoona -- at the eastern end of a major pass over the Allegheny Mountains -- developed almost exclusively as a railroad repair and service center. Only in the past 20 years since the conversion to diesel electric engines on the railroads, and the consequent lower employment in that industry, has any other manufacturing employment developed. Even with machinery, electrical goods and food manufactures, the area still has a smaller proportion of manufacturing employment than the NAR average.

The central portion of the area, the more rolling land of southeastern Pennsylvania, includes some of the best and most intensively farmed agricultural land in the Nation. Cash crops, dairying, poultry and livestock are all important here with cigar tobacco being one of the specialties. The three SMSA's in this portion of the area, Harrisburg, York and Lancaster, are established manufacturing towns. The area as a whole has a higher concentration of employment in manufacturing than does the NAR. Harrisburg, the State capital of Pennsylvania, in addition to the service industry associated with its public administration function, has a large primary steel industry. Lancaster and York have been commercial centers for the surrounding agricultural area but, in addition, have had a high proportion of employment in manufacturing, machinery, textiles, fabricated metals, and food.

Anthracite coal mining has historically been the principal economic activity of the Wilkes-Barre-Scranton portion of the area in northeastern Pennsylvania. Even by 1960 the concentration of employment in mining remained 16 times greater than in the NAR generally. This when coupled with the decline in coal mining nationally is the most important current economic fact about this portion of the area. Growth in employment in apparel and machinery has partly replaced the decline in mining employment.

For the area as a whole, the apparel industry is the largest single employer. Food, nonelectrical machinery, textiles, primary metals and fabricated metals are other important employers in the area. Employment in apparel, paper, printing, chemicals, fabricated metals, nonelectrical machinery, motor vehicles and other transportation equipment grew at a faster rate in the 1950-60 period than in the NAR.

Nevertheless, this is a slow growth area with total employment growing at just one-sixth the NAR rate in 1950-60. This results primarily from a disadvantageous industry mix arising from employment concentrations in mining, agriculture, textiles, railroads and apparel. A small and declining regional or competitive share advantage existed in 1950-60 with greatest advantage appearing in miscellaneous manufacturing, apparel, nonelectrical machinery, and fabricated metals.

Per capita income is slightly more than 10 percent below the national average with the per worker earnings a little higher. The projected rate of growth equals that of the NAR in population, is slightly above the NAR in employment, and nearly one-tenth higher in income. The projected rate of decline in agricultural employment is slower and in mining faster than the NAR average. Manufacturing employment is expected to grow at a rate substantially higher than the NAR average. Only chemicals and paper of the heavy water-using industries are projected at relatively faster rates of growth than the NAR averages for these industries.

PHILADELPHIA - WATER RESOURCE PLANNING AREA 0117

The Philadelphia WRPA has four contiguous SMSA's, three of which are located on the Delaware River. The largest of the three, Philadelphia-Camden, is situated at the confluence of the Schuylkill and Delaware Rivers. Nearly 100 miles from the Atlantic Ocean, it is the second largest port in the United States. Twenty miles downstream from Philadelphia, at the head of Delaware Bay is Wilmington, Delaware. Twenty miles upstream is Trenton, New Jersey.

This is the second most populous area in the NAR, Philadelphia being the fourth largest SMSA in the Nation. It is a highly urbanized area with great industrial diversification. For the entire area, employment is the largest in electrical machinery, followed by chemicals, apparel and food. Some specialization occurs however within the four SMSA's that make up the area. Philadelphia has considerable employment in trade, finance, public administration, professional and business services. Textiles and apparel followed by primary metals are its major manufacturers. Raw materials form the bulk of its port activity with crude petroleum alone accounting for one-half the tonnage handled. Camden, across the river, processes food products and manufactures electrical equipment. Wilmington, the southernmost city on the Delaware River, is noted for its specialization in the manufacture of chemicals. Trenton, at the head of navigation on the Delaware River, manufactures machinery, primary and fabricated metals and pottery. It is close to the site of a large, integrated steel plant recently built in Bucks County, Pennsylvania. Trenton is also the capital of the State of New Jersey with all the attendant administrative functions.

As might be expected, navy and shipyard activity are important in this area centering in Philadelphia. Armed forces personnel increased rapidly from 5,188 in 1940 to 64,812 in 1960.

The area is also an education center with more than a dozen universities and colleges including Princeton, Temple, Villanova, Swarthmore and the University of Pennsylvania.

Although the proportion of the labor force working in agriculture is only three-quarters the NAR average, this is a highly productive and diversified agricultural area with tendencies toward specialization in poultry in the Delaware portion of the area and truck farming in the New Jersey portion.

The New Jersey coast and Lower Delaware Bay portion of the area is more open and rural. Half a dozen towns with populations of over 10,000, including Dover, the capital city of Delaware, and the Atlantic City SMSA, are located in this part of the area. Atlantic City is one of the few major cities in the country that has developed solely as a resort town. The high degree of specialization in resort

and recreation activity of this entire coastal portion of the area is seen in the high levels of employment in trade and services. The proportion of the labor force working in manufacturing industries here in 1960 was only two-thirds that of the NAR, while for the entire area it was more than 10 percent greater than that of the NAR. Agriculture's share was three times the NAR average while for the whole area it was one-quarter lower than the NAR average. Economic activity in this area is, however, diversifying and as the last remaining major open area adjacent to Philadelphia and the northeast New Jersey-New York City urbanized area, it is receiving an increasing share of economic activity from the expanding megalopolis. The rate of increase in employment in this portion of the area in 1950-60 was two times greater than the NAR average while that for the entire area was only one-third faster. Moreover the rate of increase in manufacturing employment was greater still.

This entire area is a fast growth area having grown at 1-1/4 times the NAR rate in 1950-60. Its industry mix has been advantageous to growth and increasingly so in the 1950-60 decade. It also has a regional share advantage that was greater in 1950-60 than in the 1940-50 period. The chemical industry has the strongest competitive advantage, while fabricated metals, nonelectrical machinery, petroleum and apparel have more moderate ones.

In terms of per capita income this area ranks substantially above the national experience although it has been approaching this average for the past 20 years and is expected to do so.

The projected population and employment growth is at a rate about one-tenth greater than the NAR average, while income and earnings are projected to grow at closer to the NAR rate. Agriculture, forestry and fishing employment is expected to decrease more slowly than the overall NAR rate. Manufacturing employment is projected at a rate somewhat above the NAR average. Chemicals and paper have the fastest projected rates of growth among the six heavy water-using industries. Based on projected employment, this area should increase its share of the Nation's employment in chemicals and petroleum refining, maintain its share in agriculture, forestry and fishing and have a declining share in other sectors.

BALTIMORE - WATER RESOURCE PLANNING AREA 0118

The Baltimore WRPA has two distinct parts. First is the Baltimore SMSA with its attendant urban sprawl near the head of the Chesapeake Bay on its western shore. The second is the Maryland portion of the Delmarva Peninsula, referred to locally as "the eastern shore."

Baltimore, 150 miles from the open sea, has long been one of the Nation's most important ports. Much of the city's economic activity continues to be based upon its port function, such as the processing of imported raw materials notably in the large steel works at Sparrows Point, sugar refining, canneries, shipbuilding, copper and gypsum processing. Major export items include coal, grain, spices and brewery products. The balance of the area is a rural, tidewater area with some canning manufacturing but devoted principally to dairy and vegetable farming and fishing most of which is oriented towards the nearby urban areas.

Primary metals is the largest employer in the area (an employment concentration 3-1/2 times that of the NAR) with food and kindred products a reasonably close second. Transportation equipment, other than motor vehicles, electrical equipment and apparel are the next largest group of employers and are followed by printing and publishing, chemicals, fabricated metals and nonelectrical machinery. Medical and other professional services and public adminsitration are also important in the area. The fastest growing major industry in 1950-60 was electrical machinery with primary metals and nonelectrical machinery growing at three times the NAR rate.

Total employment grew faster than the NAR rate over the 1940-60 period. The region has a growing industry mix advantage based on its share of employment in transportation equipment, electrical machinery, and food and kindred products. It also has an overall regional share advantage which is strongest in electrical machinery, fabricated metals, medical and other professional services, public administration, nonelectrical machinery and transportation services. Its primary metals industry should remain in a strong competitive position with its location on tidewater and consequent accessibility to imported iron ore.

Baltimore is an education center whose major universities include Johns Hopkins, University of Maryland, University of Baltimore, and Loyola University.

Per capita income in this area has been above the national average but below the NAR experience. It is expected to remain just above the national average. The projected rates of growth in population and income are slightly below that for the entire NAR,

the rates for employment and earnings being slightly higher. Agricultural employment is expected to decline at a faster rate than the NAR average, manufacturing employment to increase at a faster rate. Employment in primary metals, chemicals and paper manufacturing is projected to grow at relatively faster rates than the NAR average, and the area is expected to increase its share of the national employment in these industries. A declining share is anticipated in all other sectors except mining, where regional advantages are expected to hold employment relatively stable.

WASHINGTON, D.C.-POTOMAC - WATER RESOURCE PLANNING AREA 0119

The Washington, D.C.-Potomac WRPA includes not only the Washington, D.C. metropolitan area and the adjacent Virginia Piedmont area but the western Maryland and West Virginia panhandle along the Upper Potomac River.

As would be expected in the Nation's capital, public administration dominates the employment scene, accounting for nearly one-quarter of all jobs. The concentration of armed forces personnel is three times greater than the NAR average reflecting the presence of the defense establishment headquarters here. Medical and other professional services and private household services also command a higher share of total employment here than the NAR average.

Less than 11 percent of total employment in the area was employed in manufacturing industries in 1960 (compared to a NAR average of 31 percent). The only manufacturing industry with an above average concentration of employment is printing and publishing which also provides the area's leading manufacturing employment. This industry is centered in metropolitan Washington. Other major manufacturing industries include fabricated metals and electrical machinery in the Washington SMSA and Hagerstown, Maryland, chemicals in the Washington SMSA and Cumberland, and transportation equipment, except motor vehicles, in Hagerstown. Manufacturing employment has a larger share of total employment in the Hagerstown and Cumberland areas (27 percent) than the metropolitan Washington-Virginia Piedmont portion (5 percent). Although the area is mountainous and therefore not too well suited to farming, agriculture is important in the western portions of the area, with employment concentrations more than four times the NAR average. There is also an above average concentration of mining employment in the West Virginia mountains relative to the NAR.

This is a fast growth area with nearly twice the NAR average rate of growth in employment in both the 1940-50 and 1950-60 periods. The metropolitan part of the area is responsible for the rapid growth. The Hagerstown area has grown at just about the national average and the Cumberland area has lost population. The area had a substantial industry mix advantage in the 1940-50 and 1950-60 periods because of its degree of employment in professional services, public administration and armed forces, and a regional or competitive share advantage which appears strongest in professional services and retail trade.

The area has long enjoyed a higher than national average income. Among areas of the NAR, its per capita income is exceeded only by the New York City and Hartford-Springfield areas.

This area has the best growth outlook of the 23 WRPA's. Its projected rate of population and employment growth is 1-1/2 to two times

greater than the overall NAR rate and income and earnings growth is expected to be nearly one-fifth faster. This area will gain a bigger national share in each of these items. Manufacturing employment is expected to grow three to four times faster than the NAR average, and increase its share of the Nation in this sector. Yet because of the high rate of growth in the nonmanufacturing, concentration of employment in manufacturing is expected to fall from the already low 11 percent of total employment in the area to only 7 percent. Of the heavy water users, paper and primary metals show the fastest relative projected rates of increase.

STAUNTON-WINCHESTER - WATER RESOURCE PLANNING AREA 0120

The Staunton-Winchester WPRA includes the Shenandoah Valley of Virginia and parts of the surrounding Blue Ridge on the east and the Allegheny Mountains on the west. It is a relatively flat, fertile area in a generally mountainous area. Only Maine and portions of New Hampshire, Vermont, and northern New York among areas of the NAR have lower population densities. There are four cities with populations between 10,000 and 25,000 in the area.

In early years, this area developed a relatively high degree of agricultural prosperity. This tradition remains as shown by agricultural employment share that 5-1/2 times the NAR average (1960). Its diversified agricultural products include poultry, dairy products, cash grain, livestock, apples and peaches. Winchester is the center of the orchard district.

Although agriculture remains the largest employer, manufacturing has developed in recent years so that its share of employment is close to the NAR average. Chemicals is the largest of the manufacturing employers with four times the NAR average concentration. Food manufacturing is second in importance followed by apparel and lumber and wood products. Electrical machinery is growing rapidly. Waynesboro is the most industrial of the cities of the area.

This is a scenic area with numerous mountain resorts and the Shenandoah National Park. The importance of the recreation industry is seen in slightly higher-than-average employment ratios in retail trade, hotels and other personal services.

The area's employment grew at the NAR average in 1940-50, but slipped to three-quarters the NAR rate in 1950-60. It has an industry mix disadvantage because of its specialization in agriculture and textiles, but a regional share advantage which shows up most strongly in apparel, electrical machinery and retail trade.

A generally low income area, per capita income has risen from about one-half the national average in 1929 to a little more than three-quarters the national average in 1962 and is expected to continue to approach that average, though remaining below.

This is one of the two areas in the NAR that is expected to increase its share of the Nation in population, employment and income. All three measures are projected to grow from 1-1/4 to 1-1/2 times faster than in the NAR as a whole. The projected growth in manufacturing employment is three to four times the NAR rate. Food and kindred products employment is expected to increase somewhat, while in the NAR as a whole it is expected to decline. Employment in the chemicals industry is expected to increase at a rate 50 percent above the NAR average, while textile employment declines at a slower rate than the NAR.

ROANOKE-LYNCHBURG - WATER RESOURCE PLANNING AREA 0121

The Roanoke-Lynchburg WRPA is part of the central Virginia Piedmont, lying between the Blue Ridge to the west and the fall line to the east. It has a relatively low population density (one-fourth the NAR average) with a little more than one-half the population living in the two small SMSA's of Roanoke and Lynchburg.

Agriculture remains the largest employer with a proportion of employment in this industry 3-1/2 times the NAR average. Dark tobacco has long been an agricultural specialty of the area. Lynchburg developed as a tobacco center following the Revolutionary War and remains important in this capacity, although as elsewhere in the area, diversified manufacturing is becoming important.

Lumber and wood products provides the largest manufacturing employment with small lumbering and woodworking industries scattered throughout the area. Textiles is second in importance followed at some distance by apparel. Electrical machinery employment has grown rapidly since 1950. The city of Roanoke developed in the 1880's as the headquarters of the Norfolk and Western Railroad, and the area's employment in the railroad industry remains disproportionately high.

Employment in this area grew at a rate one-half that of the NAR as a whole in 1940-50 and two-thirds the NAR rate in 1950-60. Its industry mix has been an inhibiting factor to growth, particularly its specialization in the relatively slow growing industries of agriculture, railroads and textiles. The area has had an overall regional or competitive advantage which was strongest (in 1950-60) in electrical machinery, textiles, apparel and miscellaneous manufacturing.

Per capita income has grown from just over one-half the national average in 1929 to nearly 80 percent of the national average in 1962. This convergence towards the national average is expected to continue. The projected growth in population and employment is at rates from one-tenth below the NAR rate to equal the NAR rate. Growth in income is projected at rates slightly above the NAR rate. Agricultural employment is expected to decline at a faster rate than in the NAR as a whole. The rate of growth in manufacturing employment is expected to be two to three times the NAR average rate. Of the industries defined as heavy water users, chemicals and primary metals show the most advantageous projected rates of growth. Textile employment is projected to decline at a rate much slower than the NAR average.

RICHMOND - WATER RESOURCE PLANNING AREA 0122

The Richmond WRPA is situated in the center of the State and extends from the Blue Ridge Mountains on the west to Chesapeake Bay on the east and from the Potomac River area on the north to the North Carolina border on the south.

Three-fourths of the population lives in either the Richmond SMSA or the area's four other independent cities. The area is less industrialized than the NAR as a whole, and agriculture continues to employ a share of the labor force that is three times greater than the rate of the NAR. The making of cigarettes is the most important manufacturing industry as it has been since early days. Lumber and wood products are second in importance followed by chemicals, food products, apparel, printing and publishing, and paper. Electrical machinery and primary metals were the fastest growing industries in the 1950-60 period.

Richmond, the capital of the State of Virginia, is also the center for finance and commerce; these activities are the major source of employment. Its initial importance was largely based on its location at the head of navigation of the James River and yet far enough inland for a north-south route to conveniently cross the many tidal streams characteristic of this part of Virginia.

Recently employment in this area has been growing at about the same rate as the NAR. It has a declining industry mix disadvantage with agriculture, railroads, lumber and wood products, textiles and private household services being the laggards in the 1950-60 period. A positive regional share advantage exists, though smaller in 1950-60 than in 1940-50. Primary metals, electrical machinery, apparel, paper, and printing were leaders in this regard in the 1950-60 period.

Per capita income has risen to within 10 percent of the national average. This relationship to the national average is expected to remain about constant or converge slightly throughout the projected period. The projected growth in population, employment and income is equal to or slightly above the total NAR rate. Agricultural employment is expected to decline at a faster rate than the NAR, while manufacturing employment is projected to grow at twice the NAR rate. Employment in chemicals, paper and primary metals show the fastest relative rate of projected growth, while textile employment is expected to decline at a rate below the NAR average.

NORFOLK - WATER RESOURCE PLANNING AREA 0123

The Norfolk WRPA centers around the lower Chesapeake Bay and its entry to the sea. Its essential physical characteristics is that it is primarily shoreline, extensively serrated by bays, inlets and estuaries. It includes the Virginia portion of the Delmarve Peninsula with both Atlantic Ocean and Chesapeake Bay shoreline, and the James, York and Rappahanock River estuaries. The population is concentrated (83 percent) in the Norfolk-Portsmouth and the Newport News-Hampton SMSA's. Newport News-Hampton occupies the peninsula north of Hampton Roads, and Norfolk-Portsmouth on the south side. Hampton Roads is one of the largest and finest harbors in the world. Norfolk-Portsmouth is the location of the largest naval base in the country and the economic fortunes of the area are highly dependent upon this military establishment. The growth in population is very illustrative of the volatility of this type of employment. Relative to the NAR, population growth ranged from approximately 200 percent in the 1930-40 and 1950-60 decades to almost 450 percent in the 1940-50 period.

The share of total employment working in the manufacturing industries is only 16 percent, one-half the NAR proportion. Manufacturing employment is highly concentrated in the shipbuilding and related metals industries, most of which is located at Newport News (one of the largest shipbuilding facilities in the world). The concentration of employment in this transportation equipment, other than motor vehicles, industry is 4-1/3 times the NAR average and accounts for one-half the manufacturing employment in the area. Of the other manufacturing industries, only food and lumber and wood products manufacturing have employment shares approximating the NAR average. All other manufacturing industries are well below the NAR share of total employment. The area also has a low ratio of employment in the trade and service sectors with the exception of hotels and other personal services and private household services.

Military employment was 23 percent of total employment in 1960 (ten times the normal concentration in the NAR), public administration another 10 percent. Besides being headquarters for the Atlantic Fleet, Norfolk is a major military embarkation point, ship outfitting and repair center. Additionally, it is a major commercial port. Both Newport News and Norfolk are deep water coal terminals handling large volumes of bituminous coal shipped from Appalachia by train, making this one of the largest export ports in the country. The concentration of employment in fishing is 6-1/2 times greater here than the NAR average. Agriculture, mainly of the truck and dairying variety, continues profitable in this area.

The past growth of the area has been directly tied to changing military needs, which accounts for the rapid growth during the war years of the 1940's and the slower growth (though still above the

NAR average) in the cold war years of the 1950's. The concentration of the military and shipbuilding industries constituted a favorable industry mix in the 1940's and 1950's. However, military employment grew slower here than elsewhere in the NAR in the 1950-60 period leaving the area with an overall competitive disadvantage in the 1950-60 period. However, several industries including retail trade, construction, food and kindred products and miscellaneous manufacturing appeared to have a regional advantage.

Per capita income has been below the national average in this area - 25 percent lower in 1929 but rising to within 5 percent of the average by 1950 and then dropping off again in 1962.

The projected growth in population, employment and income equals or exceeds slightly the NAR rates. Agriculture, forestry and fishing employment is projected to decline at a rate faster than the NAR average while manufacturing employment grows at a rate faster than the NAR. The proportion of total employment in the area working in manufacturing industries is expected to remain about one-half of the NAR ratio however.

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC

0101- BANGOR, ME.

STATE	COUNTY
MAINE	AROOSTOOK
MAINE	HANCOCK
MAINE	KNOX
MAINE	LINCOLN
MAINE	PENOBSCOT
MAINE	WASHINGTON
MAINE	WALDO

0102- PORTLAND, ME.

STATE	COUNTY
MAINE	ANDROSCOGGIN
MAINE	CUMBERLAND
MAINE	FRANKLIN
MAINE	KENNEBEC
MAINE	OXFORD
MAINE	PISCATAQUIS
MAINE	SAGADAHOC
MAINE	SOMERSET
MAINE	YORK

0103- MANCHESTER, N.H.

STATE	COUNTY
NEW HAMP.	BELKNAP
NEW HAMP.	CARROLL
NEW HAMP.	HILLSBOROUGH
NEW HAMP.	MERRIMACK
NEW HAMP.	ROCKINGHAM
NEW HAMP.	STRAFFORD

0104- UPPER CONNECTICUT RIVER VALLEY

STATE	COUNTY
NEW HAMP.	CHESHIRE
NEW HAMP.	COOS
NEW HAMP.	GRAFTON
NEW HAMP.	SULLIVAN
VERMONT	CALEDONIA
VERMONT	ESSEX
VERMONT	ORANGE
VERMONT	WINDHAM
VERMONT	WINDSOR

0105- BURLINGTON-RUTLAND

STATE	COUNTY
VERMONT	ADDISON
VERMONT	BENNINGTON
VERMONT	CHITTENDEN
VERMONT	FRANKLIN
VERMONT	GRAND ISLE
VERMONT	LAMOILLE
VERMONT	ORLEANS
VERMONT	RUTLAND
VERMONT	WASHINGTON

0106- BOSTON

STATE	COUNTY
R.I.	BRISTOL
R.I.	KENT
R.I.	NEWPORT
R.I.	PROVIDENCE
R.I.	WASHINGTON
MASS.	BARNSTABLE
MASS.	BRISTOL
MASS.	DUKES
MASS.	ESSEX
MASS.	MIDDLESEX
MASS.	NANTUCKET
MASS.	NORFOLK
MASS.	PLYMOUTH
MASS.	SUFFOLK
MASS.	WORCESTER

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC (CONT.)

0107- HARTFORD-SPRINGFIELD

STATE	COUNTY
MASS.	BERKSHIRE
CONN.	FAIRFIELD
MASS.	FRANKLIN
CONN.	HARTFORD
MASS.	HAMPDEN
MASS.	HAMPSHIRE
CONN.	LITCHFIELD
CONN.	MIDDLESEX
CONN.	NEW HAVEN
CONN.	NEW LONDON
CONN.	TOLLAND
CONN.	WINDHAM

0108- PLATTSBURGH

STATE	COUNTY
NEW YORK	CLINTON
NEW YORK	ESSEX
NEW YORK	FRANKLIN
NEW YORK	ST.LAWRENCE

0109- ALBANY-TROY-SCHENECTADY

STATE	COUNTY
NEW YORK	ALBANY
NEW YORK	COLUMBIA
NEW YORK	FULTON
NEW YORK	GREENE
NEW YORK	HAMILTON
NEW YORK	MONTGOMERY
NEW YORK	RENSSELAER
NEW YORK	SARATOGA
NEW YORK	SCHOHARIE
NEW YORK	SCHENECTADY
NEW YORK	WARREN
NEW YORK	WASHINGTON

0110- SYRACUSE-UTICA

STATE	COUNTY
NEW YORK	CAYUGA
NEW YORK	HERKIMER
NEW YORK	JEFFERSON
NEW YORK	LEWIS
NEW YORK	MADISON
NEW YORK	ONONDAGA
NEW YORK	ONEIDA
NEW YORK	OSWEGO
NEW YORK	SENECA
NEW YORK	YATES

0111- ROCHESTER-GENESEE

STATE	COUNTY
NEW YORK	ALLEGANY
NEW YORK	CATTARAUGUS
NEW YORK	GENESEE
NEW YORK	LIVINGSTON
NEW YORK	MONROE
NEW YORK	ONTARIO
NEW YORK	ORLEANS
NEW YORK	WAYNE
NEW YORK	WYOMING

0112- BINGHAMTON-ELMIRA

STATE	COUNTY
PENNA.	BRADFORD
PENNA.	POTTER
PENNA.	SUSQUEHANNA
PENNA.	TIOGA
NEW YORK	BROOME
NEW YORK	CHENANGO
NEW YORK	CHEMUNG
NEW YORK	CORTLAND
NEW YORK	DELAWARE
NEW YORK	OTSEGO
NEW YORK	SCHUYLER
NEW YORK	STEUBEN
NEW YORK	TIOGA
NEW YORK	TOMPKINS

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC (CONT.)

0113- ALLENTOWN-BETHLEHEM

STATE	COUNTY
PENNA.	BERKS
PENNA.	CARBON
PENNA.	LEHIGH
PENNA.	MONROE
PENNA.	NORTHAMPTON
PENNA.	PIKE
PENNA.	SCHUYLKILL
NEW JERSEY	HUNTERDON
NEW JERSEY	SUSSEX
NEW JERSEY	WARREN
NEW YORK	SULLIVAN
NEW YORK	ULSTER

0114- NEW YORK CITY

STATE	COUNTY
NEW JERSEY	BERGEN
NEW JERSEY	ESSEX
NEW JERSEY	HUDSON
NEW JERSEY	MIDDLESEX
NEW JERSEY	MONMOUTH
NEW JERSEY	MORRIS
NEW JERSEY	PASSAIC
NEW JERSEY	SOMERSET
NEW JERSEY	UNION
NEW YORK	BRONX
NEW YORK	DUTCHESS
NEW YORK	KINGS
NEW YORK	NASSAU
NEW YORK	NEW YORK
NEW YORK	ORANGE
NEW YORK	PUTNAM
NEW YORK	QUEENS
NEW YORK	RICHMOND
NEW YORK	ROCKLAND
NEW YORK	SUFFOLK
NEW YORK	WESTCHESTER

0115- WILLIAMSPORT, PA.

STATE	COUNTY
PENNA.	CAMERON
PENNA.	CENTRE
PENNA.	CLEARFIELD
PENNA.	CLINTON
PENNA.	ELK
PENNA.	JEFFERSON
PENNA.	LYCOMING
PENNA.	SULLIVAN
PENNA.	UNION

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC (CONT.)

0116- YORK-LANCASTER-HARRISBURG

STATE	COUNTY
PENNA.	ADAMS
PENNA.	BEDFORD
PENNA.	BLAIR
PENNA.	COLUMBIA
PENNA.	CUMBERLAND
PENNA.	DAUPHIN
PENNA.	HUNTINGDON
PENNA.	JUNIATA
PENNA.	LACKAWANNA
PENNA.	LANCASTER
PENNA.	LEBANON
PENNA.	LUZERNE
PENNA.	MIFFLIN
PENNA.	MONTOUR
PENNA.	NORTHUMBERLAND
PENNA.	PERRY
PENNA.	SNYDER
PENNA.	WAYNE
PENNA.	WYOMING
PENNA.	YORK

0117- PHILADELPHIA

STATE	COUNTY
PENNA.	BUCKS
PENNA.	CHESTER
PENNA.	DELAWARE
PENNA.	MONTGOMERY
PENNA.	PHILADELPHIA
NEW JERSEY	ATLANTIC
NEW JERSEY	BURLINGTON
NEW JERSEY	CAPE MAY
NEW JERSEY	CAMDEN
NEW JERSEY	CUMBERLAND
NEW JERSEY	GLOUCESTER
NEW JERSEY	MERCER
NEW JERSEY	OCEAN
NEW JERSEY	SALEM
MARYLAND	CECIL
DELAWARE	KENT
DELAWARE	NEW CASTLE
DELAWARE	SUSSEX

0118- BALTIMORE

STATE	COUNTY
MARYLAND	ANNE ARUNDEL
MARYLAND	BALTIMORE
MARYLAND	CAROLINE
MARYLAND	CARROLL
MARYLAND	DORCHESTER
MARYLAND	HARFORD
MARYLAND	HOWARD
MARYLAND	KENT
MARYLAND	QUEEN ANNES
MARYLAND	SOMERSET
MARYLAND	TALBOT
MARYLAND	WICOMICO
MARYLAND	WORCESTER

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC (CONT.)

0119- WASHINGTON, D.C.-POTOMAC

STATE	COUNTY
D.C.	DISTRICT OF COLUMBIA
W. VA.	BERKELEY
PENNA.	FRANKLIN
PENNA.	FULTON
W. VA.	GRANT
W. VA.	HAMPSHIRE
W. VA.	HARDY
W. VA.	JEFFERSON
W. VA.	MINERAL
W. VA.	MORGAN
W. VA.	PENDLETON
VIRGINIA	ALEXANDRIA-INDEPENDENT CITY
VIRGINIA	ARLINGTON
VIRGINIA	CULPEPER
VIRGINIA	FAUQUIER
VIRGINIA	FAIRFAX
VIRGINIA	FAIRFAX-INDEPENDENT CITY
VIRGINIA	FALLS CHURCH - INDEPENDENT CITY
VIRGINIA	FREDERICKSBURG-INDEPENDENT CITY
VIRGINIA	KING GEORGE
VIRGINIA	LOUDOUN
VIRGINIA	PRINCE WILLIAM
VIRGINIA	RAPPAHANNOCK
VIRGINIA	SPOTSYLVANIA
VIRGINIA	STAFFORD
MARYLAND	ALLEGANY
MARYLAND	CALVERT
MARYLAND	CHARLES
MARYLAND	FREDERICK
MARYLAND	GARRETT
MARYLAND	MONTGOMERY
MARYLAND	PRINCE GEORGES
MARYLAND	ST. MARYS
MARYLAND	WASHINGTON

0120- STAUNTON-WINCHESTER

STATE	COUNTY
VIRGINIA	AUGUSTA
VIRGINIA	BATH
VIRGINIA	CLARKE
VIRGINIA	FREDERICK
VIRGINIA	HARRISONBURG-INDEPENDENT CITY
VIRGINIA	HIGHLAND
VIRGINIA	PAGE
VIRGINIA	ROCKINGHAM
VIRGINIA	SHENANDOAH
VIRGINIA	STAUNTON-INDEPENDENT CITY
VIRGINIA	WARREN
VIRGINIA	WAYNESBORO-INDEPENDENT CITY
VIRGINIA	WINCHESTER-INDEPENDENT CITY

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC

0121- ROANOKE-LYNCHBURG

STATE	COUNTY
VIRGINIA	ALLEGHANY
VIRGINIA	AMHERST
VIRGINIA	APPOMATTOX
VIRGINIA	BEDFORD
VIRGINIA	BOTETOURT
VIRGINIA	BUCKINGHAM
VIRGINIA	BUENA VISTA-INDEPENDENT CITY
VIRGINIA	CAMPBELL
VIRGINIA	CHARLOTTE
VIRGINIA	CLIFTON FORGE-INDEPENDENT CITY
VIRGINIA	COVINGTON-INDEPENDENT CITY
VIRGINIA	CRAIG
VIRGINIA	CUMBERLAND
VIRGINIA	FLOYD
VIRGINIA	FRANKLIN
VIRGINIA	LYNCHBURG-INDEPENDENT CITY
VIRGINIA	MONTGOMERY
VIRGINIA	NELSON
VIRGINIA	PRINCE EDWARD
VIRGINIA	RADFORD-INDEPENDENT CITY
VIRGINIA	ROCKBRIDGE
VIRGINIA	ROANOKE
VIRGINIA	ROANOKE-INDEPENDENT CITY

0122- RICHMOND

STATE	COUNTY
VIRGINIA	ALBEMARLE
VIRGINIA	AMELIA
VIRGINIA	BRUNSWICK
VIRGINIA	CAROLINE
VIRGINIA	CHARLES CITY
VIRGINIA	CHARLOTTESVILLE-INDEPENDENT CITY
VIRGINIA	CHESTERFIELD
VIRGINIA	COLONIAL HEIGHTS-INDEPENDENT CITY
VIRGINIA	DINWIDDIE
VIRGINIA	ESSEX
VIRGINIA	FLUVANNA
VIRGINIA	GOOCHLAND
VIRGINIA	GREENE
VIRGINIA	HANOVER
VIRGINIA	HENRICO
VIRGINIA	HOPEWELL-INDEPENDENT CITY
VIRGINIA	KING AND QUEEN
VIRGINIA	KING WILLIAM
VIRGINIA	LANCASTER
VIRGINIA	LOUISA
VIRGINIA	LUNENBERG
VIRGINIA	MADISON
VIRGINIA	MECKLENBURG
VIRGINIA	NEW KENT
VIRGINIA	NOTTOWAY
VIRGINIA	NORTHUMBERLAND
VIRGINIA	ORANGE
VIRGINIA	PETERSBURG-INDEPENDENT CITY
VIRGINIA	POWHATAN
VIRGINIA	PRINCE GEORGE
VIRGINIA	RICHMOND
VIRGINIA	RICHMOND-INDEPENDENT CITY
VIRGINIA	WESTMORELAND

TABLE B-3

WATER RESOURCES PLANNING AREAS

0100-NORTH ATLANTIC (CONT.)

0123- NORFOLK

STATE	COUNTY
VIRGINIA	ACCOMACK
VIRGINIA	GLOUCESTER
VIRGINIA	HAMPTON
VIRGINIA	ISLE OF WIGHT
VIRGINIA	JAMES CITY
VIRGINIA	MATHEWS
VIRGINIA	MIDDLESEX
VIRGINIA	NANSEMOND
VIRGINIA	NEWPORT NEWS
VIRGINIA	NORTHAMPTON
VIRGINIA	NORFOLK-INDEPENDENT CITY
VIRGINIA	NORFOLK
VIRGINIA	PORTSMOUTH-INDEPENDENT CITY
VIRGINIA	PRINCESS ANNE
VIRGINIA	SOUTH NORFOLK-INDEPENDENT CITY
VIRGINIA	SUFFOLK-INDEPENDENT CITY
VIRGINIA	SURRY
VIRGINIA	VIRGINIA BEACH-INDEPENDENT CITY
VIRGINIA	WILLIAMSBURG-INDEPENDENT CITY
VIRGINIA	YORK

UNITED STATES EXCLUDING OVERSEAS

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS
SELECTED YEARS, 1929-1962

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	122,107,000	132,456,000	151,871,000	177,124,000	185,860,000
TOTAL PERSONAL INCOME (000 $58)	155,160,083	172,235,431	274,097,374	377,928,456	419,628,723
PER CAPITA INCOME ($58)	1271	1300	1805	2134	2258
PER CAPITA RELATIVE (US = 1.00)	1.000	1.000	1.000	1.000	1.000
TOTAL EARNINGS (000 $58) *	118,663,000	139,103,000	226,612,000	309,601,000	340,680,000
PER WORKER EARNINGS ($58)	3223	3066	3943	4665	5045
PER WORKER RELATIVE (US = 1.00)	1.000	1.000	1.000	1.000	1.000

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1940-1960

	1940	1950	1960
POPULATION (APRIL 1)	132,164,569	151,325,798	179,323,175
TOTAL EMPLOYMENT	45,375,815	57,475,606	66,372,649
PARTICIPATION RATE (EMP/POP)	.3433	.3798	.3701
AGRICULTURE, FORESTRY + FISHERIES	8,657,454	7,174,661	4,469,625
MINING	931,713	945,179	674,662
MANUFACTURING	10,757,960	14,801,429	18,244,900
FOOD + KINDRED PRODUCTS	1,123,018	1,434,124	1,898,661
TEXTILE MILL PRODUCTS	1,168,271	1,256,729	984,991
CHEMICALS + ALLIED PRODUCTS	447,257	668,643	902,114
PAPER + ALLIED PRODUCTS		475,465	602,535
PETROLEUM REFINING		291,763	294,054
PRIMARY METALS		1,183,767	1,272,286
ARMED FORCES	309,562	1,037,713	1,790,617
OTHER	24,719,126	33,516,624	41,192,845

UNITED STATES EXCLUDING OVERSEAS

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS
PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	205,051,000	234,193,000	269,746,000	306,757,000	348,894,000	397,562,000
TOTAL PERSONAL INCOME (000 $58)	624,585,000	963,000,000	1,442,060,000	2,196,684,000	3,302,982,000	4,934,146,000
PER CAPITA INCOME ($58)	3046	4112	5346	7161	9467	12411
PER CAPITA RELATIVE (US = 1.00)	1.000	1.000	1.000	1.000	1.000	1.000
TOTAL EARNINGS (000 $58) *	498,165,000	749,158,000	1,100,496,000	1,670,268,000	2,498,805,000	3,718,754,000
PER WORKER EARNINGS ($58)	6310	8080	10390	13615	17830	23360
PER WORKER RELATIVE (US = 1.00)	1.000	1.000	1.000	1.000	1.000	1.000

* INCLUDING ARMED FORCES PAY

EMPLOYMENT FOR SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	205,051,000	234,193,000	269,746,000	306,757,000	348,894,000	397,562,000
TOTAL EMPLOYMENT	78,954,000	92,712,000	105,910,000	122,663,000	140,141,000	159,178,000
PARTICIPATION RATE (EMP/POP)	.3850	.3950	.3926	.3998	.4016	.4003
AGRICULTURE, FORESTRY + FISHERIES	3,701,000	3,271,000	2,809,000	2,505,000	2,201,000	1,897,000
MINING	614,000	607,000	595,000	589,000	583,000	577,000
MANUFACTURING	20,958,000	23,392,000	25,596,000	28,275,000	31,152,000	34,366,000
FOOD + KINDRED PRODUCTS	1,878,000	1,871,000	1,865,000	1,859,000	1,853,000	1,848,000
TEXTILE MILL PRODUCTS	995,000	981,000	958,000	941,000	924,000	908,000
CHEMICALS + ALLIED PRODUCTS	1,095,000	1,308,000	1,508,000	1,839,000	2,170,000	2,501,000
PAPER + ALLIED PRODUCTS	720,000	849,000	969,000	1,106,000	1,253,000	1,396,000
PETROLEUM REFINING	242,000	208,000	173,000	151,000	129,000	107,000
PRIMARY METALS	1,395,000	1,467,000	1,525,000	1,600,000	1,675,000	1,750,000
ARMED FORCES	1,861,000	1,792,000	1,792,000	1,792,000	1,792,000	1,792,000
OTHER	51,820,000	63,650,000	75,118,000	89,502,000	104,413,000	120,546,000

NORTH ATLANTIC HYDROLOGIC REGION**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	32,003,000	34,378,000	38,665,000	44,239,000	46,059,000
TOTAL PERSONAL INCOME(000-$58)	55,377,989	59,350,627	80,545,591	107,705,017	119,867,847
PER CAPITA INCOME($58)***	1730	1726	2083	2435	2602
PER CAPITA RELATIVE(US=1.00)	1.36	1.33	1.15	1.14	1.15
TOTAL EARNINGS(000-$58) *	39,476,009	45,754,684	65,686,840	87,953,780	96,872,370
PER WORKER EARNINGS($58)***		3638	4240	5008	
PER WORKER RELATIVE(US=1.00)		1.19	1.10	1.10	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	34,299,300	38,576,300	44,550,800
TOTAL EMPLOYMENT	12,576,900	15,490,700	17,564,000
PARTICIPATION RATE(EMPL/POP)	.37	.40	.39
AGRICULTURE, FORESTRY + FISHERIES	697,700	594,800	401,800
MINING	133,100	115,800	51,500
MANUFACTURING	3,942,900	4,923,100	5,578,500
FOOD + KINDRED PRODUCTS	293,600	348,900	457,700
TEXTILE MILL PRODUCTS	576,900	573,200	325,100
CHEMICALS + ALLIED PRODUCTS	184,100	246,200	307,800
PAPER + ALLIED PRODUCTS		180,600	206,500
PETROLEUM REFINING		68,700	59,300
PRIMARY METALS		246,800	271,100
ARMED FORCES	91,600	288,000	423,600
OTHER	7,711,600	9,568,900	11,108,700

** DATA IN THIS TABLE HAS BEEN ADJUSTED TO HYDROLOGIC AREA AND IS NOT THE SUM O F WRPA
*** COMPUTED FROM UNROUNDED DATA

NORTH ATLANTIC HYDROLOGIC REGION***

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	49,896,100	55,644,200	62,499,700	69,517,500	77,318,700	86,160,200
TOTAL PERSONAL INCOME(000-$58)	172,393,889	253,251,417	365,264,364	540,807,139	790,460,035	1147,251,304
PER CAPITA INCOME($58)**	3455	4551	5844	7779	10223	13315
PER CAPITA RELATIVE(US=1.00)	1.13	1.11	1.09	1.09	1.08	1.07
TOTAL EARNINGS(000-$58) *	138,323,902	199,865,547	284,911,106	417,680,996	606,701,504	876,177,276
PER WORKER EARNINGS($58)**	6889	8737	11183	14572	19033	24841
PER WORKER RELATIVE(US=1.00)	1.09	1.08	1.08	1.07	1.07	1.06

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	49,896,100	55,644,200	62,499,700	69,517,500	77,318,700	86,160,200
TOTAL EMPLOYMENT	20,080,200	22,875,200	25,478,200	28,662,900	31,875,700	35,270,800
PARTICIPATION RATE(EMPL/POP)	.40	.41	.41	.41	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	325,300	278,600	235,100	204,500	175,200	147,200
MINING	29,700	25,200	22,700	20,400	18,500	16,900
MANUFACTURING	5,795,900	6,019,700	6,222,000	6,479,100	6,748,400	7,058,500
FOOD + KINDRED PRODUCTS	433,600	421,000	408,500	399,700	392,100	386,300
TEXTILE MILL PRODUCTS	269,700	222,600	187,900	159,700	137,000	118,700
CHEMICALS + ALLIED PRODUCTS	367,900	413,000	458,300	537,700	615,200	689,700
PAPER + ALLIED PRODUCTS	225,900	248,200	265,400	287,800	313,000	335,200
PETROLEUM REFINING	41,700	34,400	27,200	23,300	19,800	16,200
PRIMARY METALS	286,500	295,200	300,900	311,800	322,500	332,800
ARMED FORCES	413,000	397,500	397,400	397,400	397,400	397,400
OTHER	13,516,500	16,154,300	18,600,800	21,561,400	24,536,100	27,650,500

** COMPUTED FROM UNROUNDED DATA
*** DATA IN THIS TABLE HAS BEEN ADJUSTED TO HYDROLOGIC AREA AND IS NOT THE SUM OF WRPA

NEW ENGLAND**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	8,130,000	8,449,000	9,316,000	10,437,000	10,726,000
TOTAL PERSONAL INCOME(000-$58)	12,759,101	13,868,129	17,986,738	24,091,810	26,849,386
PER CAPITA INCOME($58)***	1569	1641	1931	2308	2503
PER CAPITA RELATIVE(US=1.00)	1.23	1.26	1.07	1.08	1.11
TOTAL EARNINGS(000-$58) *	9,324,591	10,504,614	14,439,148	19,527,431	21,539,211
PER WORKER EARNINGS($58)***		3433	3944	4719	
PER WORKER RELATIVE(US=1.00)		1.13	1.03	1.04	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	8,437,300	9,314,500	10,509,400
TOTAL EMPLOYMENT	3,060,100	3,661,200	4,137,900
PARTICIPATION RATE(EMPL/POP)	.36	.39	.39
AGRICULTURE, FORESTRY + FISHERIES	164,400	144,900	96,200
MINING	4,700	4,900	4,200
MANUFACTURING	1,189,900	1,408,300	1,545,200
FOOD + KINDRED PRODUCTS	59,700	67,500	92,000
TEXTILE MILL PRODUCTS	261,400	263,700	130,800
CHEMICALS + ALLIED PRODUCTS	24,300	31,300	36,200
PAPER + ALLIED PRODUCTS		67,900	75,500
PETROLEUM REFINING		5,600	4,600
PRIMARY METALS		58,100	57,600
ARMED FORCES	13,400	50,500	107,400
OTHER	1,687,700	2,052,600	2,384,900

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

NEW ENGLAND

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	11,597,500	12,870,100	14,467,000	16,054,500	17,837,300	19,844,600
TOTAL PERSONAL INCOME(000-$58)	38,041,179	55,275,721	79,857,473	117,766,295	173,342,101	251,922,210
PER CAPITA INCOME($58)**	3280	4295	5520	7335	9718	12695
PER CAPITA RELATIVE(US=1.00)	1.08	1.04	1.03	1.02	1.03	1.02
TOTAL EARNINGS(000-$58) *	29,959,969	43,332,346	62,137,076	90,812,635	132,370,445	190,961,137
PER WORKER EARNINGS($58)**	6438	8234	10596	13876	18233	23814
PER WORKER RELATIVE(US=1.00)	1.02	1.02	1.02	1.02	1.02	1.02

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	11,597,500	12,870,100	14,467,000	16,054,500	17,837,300	19,844,600
TOTAL EMPLOYMENT	4,653,400	5,262,300	5,864,400	6,544,500	7,260,100	8,018,800
PARTICIPATION RATE(EMPL/POP)	.40	.41	.41	.41	.41	.40
AGRICULTURE, FORESTRY + FISHERIES	79,000	68,300	58,400	51,200	44,300	37,500
MINING	3,000	2,700	2,500	2,300	2,100	1,900
MANUFACTURING	1,570,400	1,617,800	1,675,100	1,737,200	1,801,600	1,875,800
FOOD + KINDRED PRODUCTS	81,600	77,600	73,700	71,500	69,700	68,500
TEXTILE MILL PRODUCTS	96,900	78,400	65,200	54,700	46,300	39,700
CHEMICALS + ALLIED PRODUCTS	43,800	50,400	57,100	68,200	78,800	89,100
PAPER + ALLIED PRODUCTS	81,000	88,800	95,000	103,000	111,500	117,800
PETROLEUM REFINING	3,200	2,500	1,800	1,500	1,200	900
PRIMARY METALS	58,100	57,400	56,500	56,600	57,700	59,000
ARMED FORCES	89,300	85,800	85,700	85,700	85,700	85,700
OTHER	2,911,900	3,487,600	4,044,700	4,667,900	5,326,200	6,017,700

** COMPUTED FROM UNROUNDED DATA

MAINE**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	797,000	849,000	917,000	957,000	990,000
TOTAL PERSONAL INCOME(000-$58)	860,368	960,439	1,311,219	1,681,145	1,796,950
PER CAPITA INCOME($58)***	1080	1131	1430	1757	1815
PER CAPITA RELATIVE(US=1.00)	.85	.87	.79	.82	.80
TOTAL EARNINGS(000-$58) *	648,101	735,165	1,052,384	1,345,507	1,426,979
PER WORKER EARNINGS($58)***		2635	3339	3870	
PER WORKER RELATIVE(US=1.00)		.87	.87	.85	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	847,200	913,800	969,300
TOTAL EMPLOYMENT	279,000	315,200	347,700
PARTICIPATION RATE(EMPL/POP)	.33	.34	.36
AGRICULTURE, FORESTRY + FISHERIES	40,700	35,300	20,900
MINING	600	600	300
MANUFACTURING	93,300	108,600	113,500
FOOD + KINDRED PRODUCTS	5,300	8,700	11,400
TEXTILE MILL PRODUCTS	23,700	26,000	15,300
CHEMICALS + ALLIED PRODUCTS	500	800	1,100
PAPER + ALLIED PRODUCTS		16,700	19,100
PETROLEUM REFINING		100	100
PRIMARY METALS		700	400
ARMED FORCES	2,300	2,900	17,600
OTHER	142,200	167,800	195,400

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

MAINE

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,013,600	1,087,900	1,174,300	1,266,900	1,370,900	1,485,600
TOTAL PERSONAL INCOME(000-$58)	2,552,253	3,711,880	5,220,313	7,573,210	11,102,098	16,259,164
PER CAPITA INCOME($58)**	2518	3412	4446	5978	8098	10945
PER CAPITA RELATIVE(US=1.00)	.83	.83	.83	.83	.86	.88
TOTAL EARNINGS(000-$58) *	1,982,989	2,797,494	3,921,697	5,771,934	8,419,995	12,264,210
PER WORKER EARNINGS($58)**	5152	6583	8565	11503	15443	20748
PER WORKER RELATIVE(US=1.00)	.82	.81	.82	.84	.87	.89

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,013,600	1,087,900	1,174,300	1,266,900	1,370,900	1,485,600
TOTAL EMPLOYMENT	384,900	425,000	457,900	501,800	545,200	591,100
PARTICIPATION RATE(EMPL/POP)	.38	.39	.39	.40	.40	.40
AGRICULTURE, FORESTRY + FISHERIES	17,000	14,900	12,700	11,200	9,700	8,300
MINING	D	D	D	D	D	D
MANUFACTURING	121,300	126,700	131,700	137,700	144,600	152,200
FOOD + KINDRED PRODUCTS	11,100	11,100	11,200	11,100	11,100	11,000
TEXTILE MILL PRODUCTS	12,700	11,100	9,700	8,600	7,700	6,900
CHEMICALS + ALLIED PRODUCTS	1,400	1,800	2,100	2,700	3,200	3,700
PAPER + ALLIED PRODUCTS	21,000	23,200	25,000	27,600	30,400	32,300
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	400	500	500	500	500	500
ARMED FORCES	15,700	15,100	15,100	15,100	15,100	15,100
OTHER	230,600	268,100	300,200	337,500	375,600	415,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

NEW HAMPSHIRE**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	467,000	492,000	532,000	596,000	630,000
TOTAL PERSONAL INCOME(000-$58)	578,662	617,582	849,216	1,226,061	1,381,316
PER CAPITA INCOME($58)***	1239	1255	1596	2057	2193
PER CAPITA RELATIVE(US=1.00)	.97	.97	.88	.96	.97
TOTAL EARNINGS(000-$58) *	448,825	478,022	678,454	994,284	1,110,020
PER WORKER EARNINGS($58)***		2716	3338	4127	
PER WORKER RELATIVE(US=1.00)		.89	.87	.91	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	491,500	533,200	606,900
TOTAL EMPLOYMENT	176,000	203,200	240,900
PARTICIPATION RATE(EMPL/POP)	.36	.38	.40
AGRICULTURE, FORESTRY + FISHERIES	16,400	13,800	7,600
MINING	300	200	200
MANUFACTURING	70,800	82,700	97,400
FOOD + KINDRED PRODUCTS	2,000	2,100	3,500
TEXTILE MILL PRODUCTS	16,200	19,000	13,000
CHEMICALS + ALLIED PRODUCTS	200	400	500
PAPER + ALLIED PRODUCTS		7,500	7,800
PETROLEUM REFINING		100	100
PRIMARY METALS		900	1,500
ARMED FORCES	200	600	6,700
OTHER	88,300	105,900	129,000

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

NEW HAMPSHIRE

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	678,300	761,200	871,000	979,800	1,108,700	1,250,700
TOTAL PERSONAL INCOME(000-$58)	2,000,157	3,020,442	4,517,006	6,840,964	10,387,507	15,522,797
PER CAPITA INCOME($58)**	2949	3968	5186	6982	9369	12411
PER CAPITA RELATIVE(US=1.00)	.97	.96	.97	.98	.99	1.00
TOTAL EARNINGS(000-$58) *	1,577,276	2,362,457	3,457,648	5,218,550	7,853,810	11,586,900
PER WORKER EARNINGS($58)**	5714	7411	9703	12765	17105	22671
PER WORKER RELATIVE(US=1.00)	.91	.92	.93	.94	.96	.97

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	678,300	761,200	871,000	979,800	1,108,700	1,250,700
TOTAL EMPLOYMENT	276,000	318,800	356,400	408,800	459,100	511,100
PARTICIPATION RATE(EMPL/POP)	.41	.42	.41	.42	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	5,700	4,600	3,700	3,100	2,500	2,000
MINING	D	D	D	D	D	D
MANUFACTURING	103,800	111,100	119,100	127,300	135,500	144,500
FOOD + KINDRED PRODUCTS	3,300	3,300	3,400	3,400	3,500	3,500
TEXTILE MILL PRODUCTS	11,100	9,900	8,800	7,900	7,000	6,300
CHEMICALS + ALLIED PRODUCTS	700	900	1,000	1,300	1,500	1,800
PAPER + ALLIED PRODUCTS	6,300	6,000	5,800	5,600	5,600	5,500
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	2,000	2,300	2,600	2,800	3,100	3,400
ARMED FORCES	5,800	5,600	5,600	5,600	5,600	5,600
OTHER	160,600	197,300	227,900	272,800	315,400	358,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

VERMONT**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	359,000	363,000	379,000	387,000	393,000
TOTAL PERSONAL INCOME(000-$58)	405,063	402,198	512,666	664,363	741,659
PER CAPITA INCOME($58)***	1128	1108	1353	1717	1887
PER CAPITA RELATIVE(US=1.00)	.89	.85	.75	.80	.84
TOTAL EARNINGS(000-$58) *	322,242	320,879	412,276	525,150	579,110
PER WORKER EARNINGS($58)***		2565	2995	3681	
PER WORKER RELATIVE(US=1.00)		.84	.78	.81	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	359,200	377,700	389,900
TOTAL EMPLOYMENT	125,100	137,600	142,700
PARTICIPATION RATE(EMPL/POP)	.35	.36	.37
AGRICULTURE, FORESTRY + FISHERIES	31,500	25,900	17,300
MINING	1,500	1,900	1,100
MANUFACTURING	28,000	34,100	36,300
FOOD + KINDRED PRODUCTS	2,200	2,400	3,100
TEXTILE MILL PRODUCTS	4,200	4,600	1,300
CHEMICALS + ALLIED PRODUCTS	200	300	500
PAPER + ALLIED PRODUCTS		1,900	2,300
PETROLEUM REFINING			
PRIMARY METALS		500	600
ARMED FORCES	1,400	400	1,100
OTHER	62,700	75,400	86,900

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

VERMONT

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	409,200	443,100	490,700	536,200	590,800	651,300
TOTAL PERSONAL INCOME(000-$58)	1,028,262	1,503,250	2,179,309	3,256,525	4,810,293	7,017,028
PER CAPITA INCOME($58)**	2513	3392	4441	6074	8141	10774
PER CAPITA RELATIVE(US=1.00)	.83	.82	.83	.85	.86	.87
TOTAL EARNINGS(000-$58) *	781,061	1,133,337	1,654,685	2,404,297	3,502,781	5,120,654
PER WORKER EARNINGS($58)**	5015	6558	8580	11316	14906	19656
PER WORKER RELATIVE(US=1.00)	.79	.81	.83	.83	.84	.84

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	409,200	443,100	490,700	536,200	590,800	651,300
TOTAL EMPLOYMENT	155,700	172,800	192,900	212,500	235,000	260,500
PARTICIPATION RATE(EMPL/POP)	.38	.39	.39	.40	.40	.40
AGRICULTURE, FORESTRY + FISHERIES	13,800	11,700	9,900	8,500	7,300	6,100
MINING	700	700	600	500	500	400
MANUFACTURING	37,900	39,900	42,000	44,300	46,500	49,000
FOOD + KINDRED PRODUCTS	2,800	2,600	2,500	2,400	2,300	2,300
TEXTILE MILL PRODUCTS	D	D	D	D	D	D
CHEMICALS + ALLIED PRODUCTS	700	900	1,100	1,500	1,900	2,300
PAPER + ALLIED PRODUCTS	2,300	2,400	2,400	2,500	2,500	2,500
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	600	500	500	400	400	400
ARMED FORCES	D	D	D	D	D	D
OTHER	103,000	120,400	140,200	158,900	180,500	204,700

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

MASSACHUSETTS**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	4,229,000	4,318,000	4,686,000	5,117,000	5,201,000
TOTAL PERSONAL INCOME(000-$58)	6,971,066	7,399,999	9,232,814	11,985,195	13,262,157
PER CAPITA INCOME($58)***	1648	1714	1970	2342	2550
PER CAPITA RELATIVE(US=1.00)	1.30	1.32	1.09	1.10	1.13
TOTAL EARNINGS(000-$58) *	5,058,046	5,556,043	7,418,902	9,730,136	10,679,641
PER WORKER EARNINGS($58)***		3620	4011	4766	
PER WORKER RELATIVE(US=1.00)		1.19	1.04	1.05	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	4,316,700	4,690,500	5,148,600
TOTAL EMPLOYMENT	1,534,800	1,849,600	2,041,700
PARTICIPATION RATE(EMPL/POP)	.36	.39	.40
AGRICULTURE, FORESTRY + FISHERIES	42,300	39,400	27,200
MINING	1,500	1,500	1,300
MANUFACTURING	574,000	690,000	741,900
FOOD + KINDRED PRODUCTS	36,800	39,400	50,900
TEXTILE MILL PRODUCTS	126,400	118,700	54,500
CHEMICALS + ALLIED PRODUCTS	14,700	18,100	19,100
PAPER + ALLIED PRODUCTS		33,300	35,500
PETROLEUM REFINING		3,800	2,700
PRIMARY METALS		19,900	22,300
ARMED FORCES	4,400	23,200	43,600
OTHER	912,500	1,095,700	1,227,600

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

MASSACHUSETTS

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	5,582,000	6,109,600	6,795,100	7,449,700	8,187,400	9,029,900
TOTAL PERSONAL INCOME(000-$58)	18,436,927	26,171,707	37,092,481	53,697,669	77,607,559	112,078,722
PER CAPITA INCOME($58)**	3303	4284	5459	7208	9479	12412
PER CAPITA RELATIVE(US=1.00)	1.08	1.04	1.02	1.01	1.00	1.00
TOTAL EARNINGS(000-$58) *	14,587,147	20,661,351	29,156,030	42,192,891	60,482,554	86,086,459
PER WORKER EARNINGS($58)**	6424	8124	10421	13642	17847	23360
PER WORKER RELATIVE(US=1.00)	1.02	1.01	1.00	1.00	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	5,582,000	6,109,600	6,795,100	7,449,700	8,187,400	9,029,900
TOTAL EMPLOYMENT	2,270,700	2,543,100	2,797,800	3,092,800	3,388,900	3,685,200
PARTICIPATION RATE(EMPL/POP)	.41	.42	.41	.42	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	22,700	19,700	16,900	14,800	12,800	10,800
MINING	900	800	700	700	600	600
MANUFACTURING	748,000	767,100	785,300	802,000	820,100	838,200
FOOD + KINDRED PRODUCTS	43,100	39,600	36,300	34,300	32,600	31,300
TEXTILE MILL PRODUCTS	37,800	28,900	22,900	18,300	14,800	12,100
CHEMICALS + ALLIED PRODUCTS	21,900	23,900	25,900	29,500	32,700	35,600
PAPER + ALLIED PRODUCTS	38,300	41,500	43,700	46,800	49,800	52,100
PETROLEUM REFINING	1,600	1,100	800	600	400	300
PRIMARY METALS	24,100	25,000	25,500	26,400	27,500	28,700
ARMED FORCES	35,800	34,400	34,400	34,400	34,400	34,400
OTHER	1,463,300	1,721,100	1,960,500	2,240,800	2,521,000	2,801,200

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

RHODE ISLAND**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	684,000	719,000	786,000	857,000	872,000
TOTAL PERSONAL INCOME(000-$58)	1,077,758	1,167,032	1,522,317	1,822,310	2,016,206
PER CAPITA INCOME($58)***	1576	1623	1937	2126	2312
PER CAPITA RELATIVE(US=1.00)	1.24	1.25	1.07	1.00	1.02
TOTAL EARNINGS(000-$58) *	791,862	880,439	1,228,646	1,468,548	1,619,446
PER WORKER EARNINGS($58)***		3326	3827	4293	
PER WORKER RELATIVE(US=1.00)		1.09	1.00	.94	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	713,300	791,900	859,500
TOTAL EMPLOYMENT	264,700	321,100	342,100
PARTICIPATION RATE(EMPL/POP)	.37	.41	.40
AGRICULTURE, FORESTRY + FISHERIES	5,700	5,300	4,300
MINING	200	200	100
MANUFACTURING	122,800	135,800	131,600
FOOD + KINDRED PRODUCTS	4,000	4,500	6,900
TEXTILE MILL PRODUCTS	57,900	57,900	29,600
CHEMICALS + ALLIED PRODUCTS	1,400	1,800	2,300
PAPER + ALLIED PRODUCTS		1,700	2,200
PETROLEUM REFINING		800	600
PRIMARY METALS		4,700	7,100
ARMED FORCES	3,600	16,700	25,500
OTHER	132,400	163,100	180,600

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

RHODE ISLAND

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	940,700	1,036,000	1,143,200	1,257,600	1,375,700	1,499,700
TOTAL PERSONAL INCOME(000-$58)	2,865,439	4,260,139	6,111,466	9,005,373	13,023,610	18,612,342
PER CAPITA INCOME($58)**	3046	4112	5346	7161	9467	12411
PER CAPITA RELATIVE(US=1.00)	1.00	1.00	1.00	1.00	1.00	1.00
TOTAL EARNINGS(000-$58) *	2,256,255	3,273,240	4,667,480	6,780,247	9,811,385	14,012,870
PER WORKER EARNINGS($58)**	5994	7837	10182	13479	17830	23360
PER WORKER RELATIVE(US=1.00)	.95	.97	.98	.99	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	940,700	1,036,000	1,143,200	1,257,600	1,375,700	1,499,700
TOTAL EMPLOYMENT	376,400	417,700	458,400	503,000	550,300	599,900
PARTICIPATION RATE(EMPL/POP)	.40	.40	.40	.40	.40	.40
AGRICULTURE, FORESTRY + FISHERIES	3,700	3,400	3,000	2,800	2,500	2,200
MINING	D	D	D	D	D	D
MANUFACTURING	130,000	132,200	134,200	136,300	138,200	140,100
FOOD + KINDRED PRODUCTS	6,300	6,100	5,800	5,800	5,700	5,700
TEXTILE MILL PRODUCTS	21,900	17,700	14,800	12,300	10,400	8,900
CHEMICALS + ALLIED PRODUCTS	2,900	3,500	4,000	4,900	5,700	6,500
PAPER + ALLIED PRODUCTS	2,900	3,600	4,300	5,000	5,800	6,600
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	8,400	9,200	9,700	10,300	10,900	11,400
ARMED FORCES	21,500	20,700	20,700	20,700	20,700	20,700
OTHER	221,100	261,300	300,400	343,200	388,900	436,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

CONNECTICUT**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,594,000	1,708,000	2,016,000	2,523,000	2,640,000
TOTAL PERSONAL INCOME(000-$58)	2,866,184	3,320,879	4,558,506	6,712,736	7,651,098
PER CAPITA INCOME($58)***	1798	1944	2261	2661	2898
PER CAPITA RELATIVE(US=1.00)	1.41	1.50	1.25	1.25	1.28
TOTAL EARNINGS(000-$58) *	2,055,515	2,534,066	3,648,486	5,463,806	6,124,015
PER WORKER EARNINGS($58)***		3724	4373	5342	
PER WORKER RELATIVE(US=1.00)		1.22	1.14	1.17	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,709,200	2,007,300	2,535,200
TOTAL EMPLOYMENT	680,500	834,400	1,022,900
PARTICIPATION RATE(EMPL/POP)	.40	.42	.40
AGRICULTURE, FORESTRY + FISHERIES	27,800	25,300	18,800
MINING	600	500	1,200
MANUFACTURING	301,000	357,000	424,600
FOOD + KINDRED PRODUCTS	9,200	10,300	16,200
TEXTILE MILL PRODUCTS	33,100	37,500	17,100
CHEMICALS + ALLIED PRODUCTS	7,200	9,900	12,600
PAPER + ALLIED PRODUCTS		6,900	8,500
PETROLEUM REFINING		800	1,100
PRIMARY METALS		31,600	25,700
ARMED FORCES	1,500	6,700	12,900
OTHER	349,700	444,800	565,400

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

CONNECTICUT

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,973,600	3,432,200	3,992,800	4,564,200	5,203,700	5,927,500
TOTAL PERSONAL INCOME(000-$58)	11,158,141	16,608,303	24,736,898	37,392,554	56,411,034	82,432,157
PER CAPITA INCOME($58)**	3752	4839	6195	8192	10840	13907
PER CAPITA RELATIVE(US=1.00)	1.23	1.18	1.16	1.14	1.15	1.12
TOTAL EARNINGS(000-$58) *	8,775,241	13,104,467	19,279,536	28,444,716	42,299,920	61,890,044
PER WORKER EARNINGS($58)**	7376	9462	12041	15580	20322	26103
PER WORKER RELATIVE(US=1.00)	1.17	1.17	1.16	1.14	1.14	1.12

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,973,600	3,432,200	3,992,800	4,564,200	5,203,700	5,927,500
TOTAL EMPLOYMENT	1,189,700	1,385,000	1,601,100	1,825,700	2,081,500	2,371,000
PARTICIPATION RATE(EMPL/POP)	.40	.40	.40	.40	.40	.40
AGRICULTURE, FORESTRY + FISHERIES	16,000	14,100	12,200	10,900	9,500	8,100
MINING	900	800	800	700	700	700
MANUFACTURING	429,400	440,900	462,800	489,600	516,700	551,800
FOOD + KINDRED PRODUCTS	15,000	14,800	14,500	14,500	14,600	14,700
TEXTILE MILL PRODUCTS	12,700	10,400	8,700	7,300	6,200	5,300
CHEMICALS + ALLIED PRODUCTS	16,200	19,500	23,000	28,400	33,700	39,100
PAPER + ALLIED PRODUCTS	10,300	12,100	13,800	15,500	17,400	18,900
PETROLEUM REFINING	900	800	700	600	500	400
PRIMARY METALS	22,600	19,900	17,900	16,200	15,300	14,700
ARMED FORCES	10,200	9,800	9,800	9,800	9,800	9,800
OTHER	733,300	919,400	1,115,500	1,314,700	1,544,800	1,800,700

0 TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

NEW YORK, PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	9,768,000	10,902,000	11,993,000	13,358,000	13,952,000
TOTAL PERSONAL INCOME(000-$58)	21,785,037	21,624,810	27,883,291	36,172,748	40,174,143
PER CAPITA INCOME($58)***	2230	1984	2325	2708	2879
PER CAPITA RELATIVE(US=1.00)	1.75	1.53	1.29	1.27	1.28
TOTAL EARNINGS(000-$58) *	14,751,410	16,224,258	22,617,119	29,159,796	31,907,022
PER WORKER EARNINGS($58)***		3983	4654	5402	
PER WORKER RELATIVE(US=1.00)		1.31	1.21	1.19	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	10,920,600	11,965,000	13,435,700
TOTAL EMPLOYMENT	4,073,000	4,859,800	5,398,000
PARTICIPATION RATE(EMPL/POP)	.37	.41	.40
AGRICULTURE, FORESTRY + FISHERIES	124,200	106,100	73,700
MINING	5,400	6,200	9,400
MANUFACTURING	1,079,100	1,383,000	1,521,800
FOOD + KINDRED PRODUCTS	93,200	104,500	128,600
TEXTILE MILL PRODUCTS	91,600	84,200	67,800
CHEMICALS + ALLIED PRODUCTS	41,000	54,000	63,600
PAPER + ALLIED PRODUCTS		47,300	49,800
PETROLEUM REFINING		14,500	8,500
PRIMARY METALS		31,900	34,100
ARMED FORCES	23,100	26,500	36,900
OTHER	2,841,200	3,337,900	3,756,200

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

NEW YORK - PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	14,942,000	16,301,800	18,151,300	19,923,900	21,885,300	24,130,400
TOTAL PERSONAL INCOME(000-$58)	57,402,286	81,033,456	115,151,145	167,382,065	239,763,949	343,097,330
PER CAPITA INCOME($58)**	3842	4971	6344	8401	10955	14218
PER CAPITA RELATIVE(US=1.00)	1.26	1.21	1.19	1.17	1.16	1.15
TOTAL EARNINGS(000-$58) *	46,022,242	64,763,588	89,200,650	128,550,523	184,407,923	260,837,160
PER WORKER EARNINGS($58)**	7524	9449	11977	15452	20199	26267
PER WORKER RELATIVE(US=1.00)	1.19	1.17	1.15	1.13	1.13	1.12

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	14,942,000	16,301,800	18,151,300	19,923,900	21,885,300	24,130,400
TOTAL EMPLOYMENT	6,117,000	6,854,000	7,447,600	8,319,100	9,129,400	9,930,000
PARTICIPATION RATE(EMPL/POP)	.41	.42	.41	.42	.42	.41
AGRICULTURE, FORESTRY + FISHERIES	59,500	50,700	42,700	37,000	31,600	26,600
MINING	6,000	5,600	5,400	5,100	4,700	4,300
MANUFACTURING	1,554,300	1,583,400	1,601,100	1,638,000	1,678,400	1,729,300
FOOD + KINDRED PRODUCTS	117,400	109,500	102,400	97,400	93,500	90,600
TEXTILE MILL PRODUCTS	62,800	54,600	47,600	41,700	36,400	31,900
CHEMICALS + ALLIED PRODUCTS	70,800	74,400	77,700	86,500	94,400	101,500
PAPER + ALLIED PRODUCTS	50,300	51,200	51,200	52,200	54,000	55,500
PETROLEUM REFINING	4,600	3,300	2,300	1,700	1,400	1,100
PRIMARY METALS	35,700	36,300	36,400	37,300	38,000	38,600
ARMED FORCES	43,000	41,500	41,500	41,500	41,500	41,500
OTHER	4,454,100	5,172,800	5,755,900	6,597,600	7,373,200	8,128,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

NEW JERSEY**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	3,989,000	4,175,000	4,872,000	6,015,000	6,385,000
TOTAL PERSONAL INCOME(000-$58)	6,699,818	7,485,714	10,776,843	15,641,661	17,587,229
PER CAPITA INCOME($58)***	1680	1793	2212	2600	2754
PER CAPITA RELATIVE(US=1.00)	1.32	1.38	1.23	1.22	1.22
TOTAL EARNINGS(000-$58) *	5,069,439	6,059,560	9,141,865	13,161,536	14,696,393
PER WORKER EARNINGS($58)***		3862	4578	5491	
PER WORKER RELATIVE(US=1.00)		1.27	1.19	1.21	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	4,160,200	4,835,300	6,066,800
TOTAL EMPLOYMENT	1,569,100	1,997,000	2,397,100
PARTICIPATION RATE(EMPL/POP)	.38	.41	.40
AGRICULTURE, FORESTRY + FISHERIES	50,900	52,500	35,700
MINING	3,600	4,100	3,700
MANUFACTURING	585,300	748,900	885,800
FOOD + KINDRED PRODUCTS	41,000	51,000	72,600
TEXTILE MILL PRODUCTS	63,600	63,300	34,800
CHEMICALS + ALLIED PRODUCTS	52,900	75,900	97,400
PAPER + ALLIED PRODUCTS		21,000	27,300
PETROLEUM REFINING		25,000	20,900
PRIMARY METALS		34,200	41,100
ARMED FORCES	4,800	34,800	53,100
OTHER	924,500	1,156,700	1,418,700

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

NEW JERSEY

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	6,976,800	8,142,500	9,243,400	10,500,100	11,858,000	13,316,400
TOTAL PERSONAL INCOME(000-$58)	25,500,204	39,173,568	56,828,423	85,722,816	126,856,884	185,097,960
PER CAPITA INCOME($58)**	3655	4811	6148	8164	10698	13900
PER CAPITA RELATIVE(US=1.00)	1.20	1.17	1.15	1.14	1.13	1.12
TOTAL EARNINGS(000-$58) *	21,068,457	30,718,423	44,348,864	66,264,882	97,269,594	142,146,195
PER WORKER EARNINGS($58)**	7446	9292	11845	15430	20056	26163
PER WORKER RELATIVE(US=1.00)	1.18	1.15	1.14	1.13	1.12	1.12

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	6,976,800	8,142,500	9,243,400	10,500,100	11,858,000	13,316,400
TOTAL EMPLOYMENT	2,829,500	3,305,900	3,744,100	4,294,500	4,849,900	5,433,100
PARTICIPATION RATE(EMPL/POP)	.41	.41	.41	.41	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	29,900	26,600	22,800	20,300	17,600	14,800
MINING	2,500	2,300	2,100	2,000	1,900	1,700
MANUFACTURING	928,400	967,100	997,300	1,038,400	1,081,000	1,130,100
FOOD + KINDRED PRODUCTS	72,800	73,600	74,000	73,700	72,700	71,700
TEXTILE MILL PRODUCTS	30,200	24,400	20,300	17,000	14,500	12,500
CHEMICALS + ALLIED PRODUCTS	115,700	128,500	141,000	164,000	186,400	207,900
PAPER + ALLIED PRODUCTS	31,800	36,000	39,300	42,900	46,900	50,500
PETROLEUM REFINING	14,300	11,600	9,000	7,600	6,500	5,300
PRIMARY METALS	47,400	52,500	56,700	62,000	67,100	72,000
ARMED FORCES	44,100	42,500	42,500	42,500	42,500	42,500
OTHER	1,824,700	2,267,500	2,678,800	3,191,400	3,706,900	4,244,000

0 TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

PENNSYLVANIA, PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	6,187,000	6,276,000	6,702,000	7,239,000	7,386,000
TOTAL PERSONAL INCOME(000-$58)	8,851,301	9,057,114	12,591,282	15,975,240	17,082,406
PER CAPITA INCOME($58)***	1431	1443	1879	2207	2313
PER CAPITA RELATIVE(US=1.00)	1.13	1.11	1.04	1.03	1.02
TOTAL EARNINGS(000-$58) *	6,428,481	7,186,335	10,196,321	13,014,399	13,771,561
PER WORKER EARNINGS($58)***		3377	3915	4665	
PER WORKER RELATIVE(US=1.00)		1.11	1.02	1.02	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	6,278,400	6,695,900	7,294,400
TOTAL EMPLOYMENT	2,127,800	2,604,700	2,789,600
PARTICIPATION RATE(EMPL/POP)	.34	.39	.38
AGRICULTURE, FORESTRY + FISHERIES	135,200	118,100	83,000
MINING	111,000	93,900	29,000
MANUFACTURING	722,200	928,900	1,048,100
FOOD + KINDRED PRODUCTS	59,200	72,600	92,800
TEXTILE MILL PRODUCTS	138,400	135,200	75,200
CHEMICALS + ALLIED PRODUCTS	24,500	31,500	47,300
PAPER + ALLIED PRODUCTS		29,900	34,600
PETROLEUM REFINING		18,900	20,300
PRIMARY METALS		84,700	87,700
ARMED FORCES	5,100	16,000	16,400
OTHER	1,154,300	1,447,700	1,613,000

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

PENNSYLVANIA - PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	7,698,500	8,274,300	8,974,700	9,679,200	10,454,300	11,322,500
TOTAL PERSONAL INCOME(000-$58)	23,853,268	34,639,075	48,651,876	70,213,127	100,163,108	142,074,404
PER CAPITA INCOME($58)**	3098	4186	5421	7254	9581	12548
PER CAPITA RELATIVE(US=1.00)	1.02	1.02	1.01	1.01	1.01	1.01
TOTAL EARNINGS(000-$58) *	19,056,756	26,928,035	37,677,257	53,510,713	75,492,222	107,119,616
PER WORKER EARNINGS($58)**	6283	8055	10390	13650	17830	23360
PER WORKER RELATIVE(US=1.00)	1.00	1.00	1.00	1.00	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	7,698,500	8,274,300	8,974,700	9,679,200	10,454,300	11,322,500
TOTAL EMPLOYMENT	3,033,200	3,342,800	3,626,300	3,920,100	4,234,000	4,585,600
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.41	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	68,000	58,600	49,800	43,600	37,600	31,900
MINING	14,400	11,200	9,400	7,900	7,000	6,200
MANUFACTURING	1,081,900	1,112,300	1,134,000	1,168,500	1,205,300	1,249,200
FOOD + KINDRED PRODUCTS	89,000	86,600	84,100	82,400	80,500	79,200
TEXTILE MILL PRODUCTS	65,100	52,400	43,600	36,600	31,200	26,900
CHEMICALS + ALLIED PRODUCTS	57,000	64,100	71,100	83,400	95,600	107,500
PAPER + ALLIED PRODUCTS	37,800	41,300	43,900	47,300	51,400	55,300
PETROLEUM REFINING	15,500	13,500	11,100	9,800	8,500	7,100
PRIMARY METALS	89,500	88,900	87,300	87,800	88,000	88,100
ARMED FORCES	17,500	16,800	16,800	16,800	16,800	16,800
OTHER	1,851,400	2,143,900	2,415,700	2,683,200	2,967,400	3,281,400

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

DELAWARE**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	236,000	269,000	321,000	441,000	466,000
TOTAL PERSONAL INCOME(000-$58)	443,038	604,396	825,091	1,180,652	1,280,267
PER CAPITA INCOME($58)***	1877	2247	2570	2677	2747
PER CAPITA RELATIVE(US=1.00)	1.48	1.73	1.42	1.25	1.22
TOTAL EARNINGS(000-$58) *	269,801	379,560	602,551	886,984	952,942
PER WORKER EARNINGS($58)***		3698	4742	5221	
PER WORKER RELATIVE(US=1.00)		1.21	1.23	1.15	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	266,500	318,100	446,300
TOTAL EMPLOYMENT	102,600	127,100	169,900
PARTICIPATION RATE(EMPL/POP)	.39	.40	.38
AGRICULTURE, FORESTRY + FISHERIES	14,600	11,700	8,900
MINING	100	100	100
MANUFACTURING	30,400	41,900	56,600
FOOD + KINDRED PRODUCTS	2,600	5,000	6,300
TEXTILE MILL PRODUCTS	3,300	3,300	2,400
CHEMICALS + ALLIED PRODUCTS	9,500	14,800	22,400
PAPER + ALLIED PRODUCTS		500	500
PETROLEUM REFINING		800	1,600
PRIMARY METALS		1,800	1,800
ARMED FORCES	800	400	7,200
OTHER	56,700	72,900	97,000

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

DELAWARE

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	526,300	618,200	724,700	838,200	964,400	1,106,300
TOTAL PERSONAL INCOME(000-$58)	1,899,713	2,953,972	4,448,379	6,846,011	10,313,288	15,358,564
PER CAPITA INCOME($58)**	3609	4778	6138	8168	10694	13883
PER CAPITA RELATIVE(US=1.00)	1.18	1.16	1.15	1.14	1.13	1.12
TOTAL EARNINGS(000-$58) *	1,455,095	2,210,879	3,309,648	4,979,760	7,488,989	11,163,422
PER WORKER EARNINGS($58)**	7067	8981	11533	14976	19613	25696
PER WORKER RELATIVE(US=1.00)	1.12	1.11	1.11	1.10	1.10	1.10

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	526,300	618,200	724,700	838,200	964,400	1,106,300
TOTAL EMPLOYMENT	205,900	246,200	287,000	332,500	381,800	434,400
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.40	.40	.39
AGRICULTURE, FORESTRY + FISHERIES	7,200	6,200	5,300	4,600	3,900	3,300
MINING	D	D	D	D	D	D
MANUFACTURING	64,000	71,200	77,700	85,300	93,000	101,500
FOOD + KINDRED PRODUCTS	6,800	7,300	7,500	7,700	7,700	7,700
TEXTILE MILL PRODUCTS	2,200	1,900	1,700	1,400	1,200	1,100
CHEMICALS + ALLIED PRODUCTS	29,200	35,100	41,300	51,200	61,500	72,200
PAPER + ALLIED PRODUCTS	500	500	500	500	500	500
PETROLEUM REFINING	1,400	1,300	1,100	1,000	900	800
PRIMARY METALS	1,800	1,700	1,700	1,600	1,600	1,600
ARMED FORCES	7,500	7,200	7,200	7,200	7,200	7,200
OTHER	127,200	161,600	196,700	235,400	277,600	322,400

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

MARYLAND**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,621,000	1,839,000	2,355,000	3,066,000	3,245,000
TOTAL PERSONAL INCOME(000-$58)	2,287,522	2,865,934	4,550,062	6,867,721	7,959,010
PER CAPITA INCOME($58)***	1411	1558	1932	2240	2453
PER CAPITA RELATIVE(US=1.00)	1.11	1.20	1.07	1.05	1.09
TOTAL EARNINGS(000-$58) *	1,638,698	2,247,692	3,773,785	5,787,941	6,689,641
PER WORKER EARNINGS($58)***		3253	4060	4883	
PER WORKER RELATIVE(US=1.00)		1.07	1.06	1.07	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,821,200	2,343,000	3,100,700
TOTAL EMPLOYMENT	690,900	929,500	1,185,400
PARTICIPATION RATE(EMPL/POP)	.38	.40	.38
AGRICULTURE, FORESTRY + FISHERIES	74,600	60,100	40,800
MINING	4,100	2,800	2,000
MANUFACTURING	184,200	226,200	291,400
FOOD + KINDRED PRODUCTS	23,500	28,500	37,200
TEXTILE MILL PRODUCTS	5,800	5,900	3,400
CHEMICALS + ALLIED PRODUCTS	16,400	18,500	18,300
PAPER + ALLIED PRODUCTS		5,100	7,800
PETROLEUM REFINING		3,500	2,400
PRIMARY METALS		32,900	41,800
ARMED FORCES	9,900	35,200	53,200
OTHER	418,100	605,100	798,000

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

MARYLAND

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,729,500	4,284,700	4,959,400	5,596,900	6,414,800	7,442,200
TOTAL PERSONAL INCOME(000-$58)	12,154,440	18,852,680	28,104,920	42,486,068	63,582,204	95,915,963
PER CAPITA INCOME($58)**	3259	4400	5667	7591	9912	12888
PER CAPITA RELATIVE(US=1.00)	1.07	1.07	1.06	1.06	1.05	1.04
TOTAL EARNINGS(000-$58) *	9,779,597	14,862,844	22,379,517	33,932,986	50,420,786	75,700,104
PER WORKER EARNINGS($58)**	6752	8565	11013	14296	18494	24294
PER WORKER RELATIVE(US=1.00)	1.07	1.06	1.06	1.05	1.04	1.04

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,729,500	4,284,700	4,959,400	5,596,900	6,414,800	7,442,200
TOTAL EMPLOYMENT	1,448,400	1,735,300	2,032,100	2,373,600	2,726,300	3,116,000
PARTICIPATION RATE(EMPL/POP)	.39	.41	.41	.42	.42	.42
AGRICULTURE, FORESTRY + FISHERIES	33,100	28,300	23,800	20,700	17,700	14,800
MINING	1,300	1,200	1,000	900	800	700
MANUFACTURING	335,300	376,600	416,500	459,700	504,200	552,200
FOOD + KINDRED PRODUCTS	36,300	35,200	34,300	33,400	33,000	32,600
TEXTILE MILL PRODUCTS	2,700	2,100	1,700	1,400	1,100	900
CHEMICALS + ALLIED PRODUCTS	21,500	23,900	26,200	30,000	33,200	36,000
PAPER + ALLIED PRODUCTS	10,800	14,200	17,400	21,100	25,000	28,700
PETROLEUM REFINING	1,800	1,300	1,000	800	600	500
PRIMARY METALS	45,000	48,000	50,500	53,100	55,700	58,100
ARMED FORCES	48,400	46,600	46,600	46,600	46,600	46,600
OTHER	1,030,400	1,282,700	1,544,100	1,845,700	2,157,000	2,501,600

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WEST VIRGINIA, PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION** TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	111,000	121,000	119,000	120,000	121,000
TOTAL PERSONAL INCOME(000-$58)	65,779	77,017	126,242	162,107	187,644
PER CAPITA INCOME($58)***	591	639	1062	1348	1548
PER CAPITA RELATIVE(US=1.00)	.46	.49	.59	.63	.69
TOTAL EARNINGS(000-$58) *	57,466	66,817	105,671	127,069	146,147
PER WORKER EARNINGS($58)***		1901	2696	3300	
PER WORKER RELATIVE(US=1.00)		.62	.70	.72	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	120,200	118,800	120,600
TOTAL EMPLOYMENT	35,200	39,200	38,500
PARTICIPATION RATE(EMPL/POP)	.29	.33	.32
AGRICULTURE, FORESTRY + FISHERIES	11,500	10,500	6,200
MINING	1,700	1,600	900
MANUFACTURING	7,600	7,900	9,500
FOOD + KINDRED PRODUCTS	400	700	1,000
TEXTILE MILL PRODUCTS	2,700	2,200	1,700
CHEMICALS + ALLIED PRODUCTS	1,000	300	700
PAPER + ALLIED PRODUCTS		700	900
PETROLEUM REFINING			
PRIMARY METALS		100	100
ARMED FORCES			100
OTHER	14,400	19,100	21,900

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

WEST VIRGINIA - PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	123,700	126,400	130,000	135,500	142,000	150,400
TOTAL PERSONAL INCOME(000-$58)	294,363	418,883	595,359	863,337	1,244,093	1,770,550
PER CAPITA INCOME($58)**	2379	3313	4580	6372	8764	11773
PER CAPITA RELATIVE(US=1.00)	.78	.81	.86	.89	.93	.95
TOTAL EARNINGS(000-$58) *	207,009	300,257	437,627	653,861	924,928	1,268,915
PER WORKER EARNINGS($58)**	4922	6787	9351	13042	17141	22223
PER WORKER RELATIVE(US=1.00)	.78	.84	.90	.96	.96	.95

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	123,700	126,400	130,000	135,500	142,000	150,400
TOTAL EMPLOYMENT	42,100	44,200	46,800	50,100	54,000	57,100
PARTICIPATION RATE(EMPL/POP)	.34	.35	.36	.37	.38	.38
AGRICULTURE, FORESTRY + FISHERIES	5,000	4,300	3,600	3,100	2,700	2,300
MINING	600	500	500	500	400	400
MANUFACTURING	10,500	10,900	11,300	11,700	12,100	12,500
FOOD + KINDRED PRODUCTS	1,100	1,200	1,300	1,300	1,400	1,400
TEXTILE MILL PRODUCTS	1,300	1,100	800	700	600	500
CHEMICALS + ALLIED PRODUCTS	800	800	900	1,000	1,100	1,200
PAPER + ALLIED PRODUCTS	1,000	1,200	1,300	1,400	1,500	1,700
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	D	D	D	D	D	D
ARMED FORCES	500	500	500	500	500	500
OTHER	25,500	28,000	30,900	34,300	38,300	41,400

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

VIRGINIA, PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,477,000	1,658,000	2,181,000	2,802,000	2,998,000
TOTAL PERSONAL INCOME(000-$58)	1,358,003	1,949,931	3,646,813	5,413,670	6,332,128
PER CAPITA INCOME($58)***	919	1176	1672	1932	2112
PER CAPITA RELATIVE(US=1.00)	.72	.90	.93	.91	.94
TOTAL EARNINGS(000-$58) *	1,116,593	1,654,200	3,105,583	4,598,775	5,328,855
PER WORKER EARNINGS($58)***		2715	3515	4205	
PER WORKER RELATIVE(US=1.00)		.89	.91	.92	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,631,800	2,183,500	2,813,000
TOTAL EMPLOYMENT	609,400	883,500	1,093,600
PARTICIPATION RATE(EMPL/POP)	.37	.40	.39
AGRICULTURE, FORESTRY + FISHERIES	121,800	90,100	56,500
MINING	2,400	2,100	2,200
MANUFACTURING	121,600	150,200	196,800
FOOD + KINDRED PRODUCTS	10,700	15,700	23,900
TEXTILE MILL PRODUCTS	10,100	15,300	9,000
CHEMICALS + ALLIED PRODUCTS	14,200	19,400	21,500
PAPER + ALLIED PRODUCTS		7,800	9,800
PETROLEUM REFINING		300	800
PRIMARY METALS		2,800	6,600
ARMED FORCES	28,100	108,900	135,600
OTHER	335,500	532,200	702,600

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

VIRGINIA - PORTION WITHIN NORTH ATLANTIC HYDROLOGIC REGION

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,451,500	4,102,200	4,817,100	5,674,400	6,581,000	7,585,700
TOTAL PERSONAL INCOME(000-$58)	9,881,644	16,155,216	24,981,481	40,225,822	62,302,327	94,146,123
PER CAPITA INCOME($58)**	2863	3938	5186	7089	9467	12411
PER CAPITA RELATIVE(US=1.00)	.94	.96	.97	.99	1.00	1.00
TOTAL EARNINGS(000-$58) *	8,085,139	13,022,053	20,314,912	31,830,032	48,460,817	73,362,781
PER WORKER EARNINGS($58)**	5931	7838	10286	13615	17830	23360
PER WORKER RELATIVE(US=1.00)	.94	.97	.99	1.00	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,451,500	4,102,200	4,817,100	5,674,400	6,581,000	7,585,700
TOTAL EMPLOYMENT	1,363,200	1,661,400	1,975,000	2,337,900	2,717,900	3,140,500
PARTICIPATION RATE(EMPL/POP)	.39	.40	.41	.41	.41	.41
AGRICULTURE, FORESTRY + FISHERIES	42,900	34,900	28,000	23,300	19,200	15,500
MINING	1,700	1,600	1,600	1,500	1,500	1,400
MANUFACTURING	228,300	258,300	287,300	318,900	351,600	386,800
FOOD + KINDRED PRODUCTS	25,800	27,400	29,000	30,200	31,800	32,800
TEXTILE MILL PRODUCTS	8,400	7,600	6,900	6,200	5,600	5,100
CHEMICALS + ALLIED PRODUCTS	28,500	35,200	42,400	52,700	63,100	73,300
PAPER + ALLIED PRODUCTS	12,300	14,700	16,700	19,200	22,000	24,900
PETROLEUM REFINING	800	700	700	600	600	500
PRIMARY METALS	8,500	9,900	11,200	12,600	13,600	14,500
ARMED FORCES	131,400	126,500	126,500	126,500	126,500	126,500
OTHER	958,900	1,240,100	1,531,600	1,867,600	2,219,200	2,610,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

DISTRICT OF COLUMBIA**

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	483,000	690,000	806,000	761,000	780,000
TOTAL PERSONAL INCOME(000-$58)	1,128,390	1,817,582	2,159,229	2,199,408	2,415,634
PER CAPITA INCOME($58)***	2336	2634	2679	2890	3097
PER CAPITA RELATIVE(US=1.00)	1.84	2.03	1.48	1.35	1.37
TOTAL EARNINGS(000-$58) *	819,530	1,431,648	1,704,797	1,689,849	1,840,598
PER WORKER EARNINGS($58)***		4635	4384	4774	
PER WORKER RELATIVE(US=1.00)		1.52	1.14	1.05	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	663,100	802,200	764,000
TOTAL EMPLOYMENT	308,900	388,900	354,000
PARTICIPATION RATE(EMPL/POP)	.47	.48	.46
AGRICULTURE, FORESTRY + FISHERIES	600	700	700
MINING	100	100	100
MANUFACTURING	22,500	27,800	23,300
FOOD + KINDRED PRODUCTS	3,200	3,300	3,300
TEXTILE MILL PRODUCTS	100	100	
CHEMICALS + ALLIED PRODUCTS	300	400	400
PAPER + ALLIED PRODUCTS		400	300
PETROLEUM REFINING		100	100
PRIMARY METALS		100	300
ARMED FORCES	6,500	15,600	13,600
OTHER	279,200	344,700	316,200

** INCOME AND EARNINGS ARE RESIDENCE ADJUSTED AND WILL NOT EQUAL SUM OF WRPA
*** COMPUTED FROM UNROUNDED DATA

DISTRICT OF COLUMBIA

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	850,200	923,900	1,032,000	1,114,800	1,181,600	1,261,700
TOTAL PERSONAL INCOME(000-$58)	3,366,792	4,748,846	6,645,308	9,301,598	12,892,081	17,868,200
PER CAPITA INCOME($58)**	3960	5140	6439	8344	10910	14162
PER CAPITA RELATIVE(US=1.00)	1.30	1.25	1.20	1.17	1.15	1.14
TOTAL EARNINGS(000-$58) *	2,689,638	3,727,122	5,105,555	7,145,604	9,865,800	13,617,946
PER WORKER EARNINGS($58)**	6941	8807	11222	14567	18890	24530
PER WORKER RELATIVE(US=1.00)	1.10	1.09	1.08	1.07	1.06	1.05

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	850,200	923,900	1,032,000	1,114,800	1,181,600	1,261,700
TOTAL EMPLOYMENT	387,500	423,200	455,000	490,500	522,300	555,200
PARTICIPATION RATE(EMPL/POP)	.46	.46	.44	.44	.44	.44
AGRICULTURE, FORESTRY + FISHERIES	700	800	700	700	600	600
MINING	D	D	D	D	D	D
MANUFACTURING	22,800	22,200	21,600	21,400	21,200	21,100
FOOD + KINDRED PRODUCTS	2,800	2,500	2,200	2,100	2,000	1,900
TEXTILE MILL PRODUCTS	D	D	D	D	D	D
CHEMICALS + ALLIED PRODUCTS	500	600	700	800	900	1,000
PAPER + ALLIED PRODUCTS	D	D	D	D	D	D
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	400	500	600	700	800	900
ARMED FORCES	31,300	30,100	30,100	30,100	30,100	30,100
OTHER	332,600	370,100	402,400	438,200	470,300	503,400

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - BANGOR, ME., NORTH ATLANTIC 0101

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	312,080	327,056	340,539	362,667	372,717
TOTAL PERSONAL INCOME(000-$58)	288,170	300,533	427,143	567,245	604,914
PER CAPITA INCOME($58)	923	919	1254	1564	1623
PER CAPITA RELATIVE(US=1.00)	.726	.707	.695	.733	.719
TOTAL EARNINGS(000-$58) *	224,329	227,956	341,470	453,887	480,047
PER WORKER EARNINGS($58)		2470	3238	3695	
PER WORKER RELATIVE(US=1.00)		.811	.842	.811	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	326,373	339,341	367,315
TOTAL EMPLOYMENT	92,289	105,454	122,844
PARTICIPATION RATE(EMPL/POP)	.283	.311	.334
AGRICULTURE,FORESTRY + FISHERIES	22,804	20,795	12,134
MINING	398	367	92
MANUFACTURING	18,848	24,699	28,802
FOOD + KINDRED PRODUCTS	2,240	4,200	4,562
TEXTILE MILL PRODUCTS	1,595	2,017	2,360
CHEMICALS + ALLIED PRODUCTS	281	410	724
PAPER + ALLIED PRODUCTS		5,200	7,235
PETROLEUM REFINING		53	58
PRIMARY METALS		109	17
ARMED FORCES	82	453	11,634
OTHER	50,157	59,140	70,182

WATER RESOURCES PLANNING AREA - BANGOR, ME., NORTH ATLANTIC 0101

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	378,100	407,100	437,200	476,600	516,300	558,600
TOTAL PERSONAL INCOME(000-$58)	840,845	1,242,720	1,741,295	2,571,784	3,740,475	5,447,595
PER CAPITA INCOME($58)**	2224	3052	3983	5396	7245	9753
PER CAPITA RELATIVE(US=1.00)	.73	.74	.75	.75	.77	.79
TOTAL EARNINGS (000-$58) *	649,248	935,654	1,314,295	1,940,604	2,820,490	4,100,054
PER WORKER EARNINGS($58)**	4746	6099	7896	10526	13977	18668
PER WORKER RELATIVE(US=1.00)	.75	.75	.76	.77	.78	.80

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	378,100	407,100	437,200	476,600	516,300	558,600
TOTAL EMPLOYMENT	136,800	153,400	166,500	184,400	201,800	219,600
PARTICIPATION RATE(EMPL/POP)	.36	.38	.38	.39	.39	.39
AGRICULTURE,FORESTRY + FISHERIES	9,900	8,700	7,500	6,600	5,700	4,900
MINING	D	D	D	D	D	D
MANUFACTURING	33,600	38,200	42,500	47,300	52,400	58,100
FOOD + KINDRED PRODUCTS	4,500	4,500	4,500	4,500	4,500	4,500
TEXTILE MILL PRODUCTS	2,500	2,500	2,500	2,400	2,400	2,300
CHEMICALS + ALLIED PRODUCTS	900	1,200	1,400	1,800	2,200	2,600
PAPER + ALLIED PRODUCTS	8,800	10,600	12,300	14,100	15,900	17,700
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	D	D	D	D	D	D
ARMED FORCES	10,800	10,400	10,400	10,400	10,400	10,400
OTHER	82,400	96,000	108,100	120,100	133,200	146,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - PORTLAND, ME., NORTH ATLANTIC 0102

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	484,920	521,944	576,461	594,333	617,283
TOTAL PERSONAL INCOME(000-$58)	571,805	660,653	884,380	1,113,978	1,191,902
PER CAPITA INCOME($58)	1179	1266	1534	1874	1931
PER CAPITA RELATIVE(US=1.00)	.928	.974	.850	.878	.855
TOTAL EARNINGS(000-$58) *	423,357	506,738	711,469	891,817	946,718
PER WORKER EARNINGS($58)		2714	3392	3967	
PER WORKER RELATIVE(US=1.00)		.891	.882	.871	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	520,853	574,433	601,950
TOTAL EMPLOYMENT	186,747	209,772	224,807
PARTICIPATION RATE(EMPL/POP)	.359	.365	.373
AGRICULTURE,FORESTRY + FISHERIES	17,922	14,527	8,809
MINING	180	261	201
MANUFACTURING	74,409	83,878	84,664
FOOD + KINDRED PRODUCTS	3,068	4,517	6,872
TEXTILE MILL PRODUCTS	22,095	23,979	12,988
CHEMICALS + ALLIED PRODUCTS	261	366	377
PAPER + ALLIED PRODUCTS		11,474	11,876
PETROLEUM REFINING		44	51
PRIMARY METALS		551	396
ARMED FORCES	2,195	2,496	5,922
OTHER	92,041	108,610	125,211

WATER RESOURCES PLANNING AREA - PORTLAND, ME., NORTH ATLANTIC 0102

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	635,500	680,800	737,100	790,300	854,700	927,000
TOTAL PERSONAL INCOME(000-$58)	1,711,408	2,469,160	3,479,018	5,001,426	7,361,623	10,811,569
PER CAPITA INCOME($58)**	2693	3627	4720	6328	8613	11663
PER CAPITA RELATIVE(US=1.00)	.88	.88	.88	.88	.91	.94
TOTAL EARNINGS (000-$58) *	1,333,741	1,861,840	2,607,402	3,831,330	5,599,505	8,164,156
PER WORKER EARNINGS($58)**	5376	6856	8947	12071	16305	21978
PER WORKER RELATIVE(US=1.00)	.85	.85	.86	.89	.91	.94

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	635,500	680,800	737,100	790,300	854,700	927,000
TOTAL EMPLOYMENT	248,100	271,500	291,400	317,400	343,400	371,500
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	7,100	6,100	5,300	4,600	4,000	3,400
MINING	D	D	D	D	D	D
MANUFACTURING	87,700	88,500	89,200	90,500	92,200	94,100
FOOD + KINDRED PRODUCTS	6,600	6,600	6,700	6,600	6,600	6,500
TEXTILE MILL PRODUCTS	10,200	8,600	7,300	6,200	5,300	4,600
CHEMICALS + ALLIED PRODUCTS	500	600	700	800	1,000	1,200
PAPER + ALLIED PRODUCTS	12,200	12,600	12,700	13,500	14,400	14,600
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	400	500	500	500	500	500
ARMED FORCES	4,900	4,700	4,700	4,700	4,700	4,700
OTHER	148,200	172,100	192,100	217,400	242,400	269,100

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - MANCHESTER, N.H., NORTH ATLANTIC 0103

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	326,741	347,546	383,241	441,426	469,155
TOTAL PERSONAL INCOME(000-$58)	421,404	451,519	621,113	910,898	1,030,642
PER CAPITA INCOME($58)	1290	1299	1621	2064	2197
PER CAPITA RELATIVE(US=1.00)	1.015	.999	.898	.967	.973
TOTAL EARNINGS(000-$58) *	323,321	347,285	494,350	735,152	824,983
PER WORKER EARNINGS($58)		2773	3300	4059	
PER WORKER RELATIVE(US=1.00)		.910	.858	.891	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	347,210	384,135	449,515
TOTAL EMPLOYMENT	125,224	149,808	181,131
PARTICIPATION RATE(EMPL/POP)	.361	.390	.403
AGRICULTURE,FORESTRY + FISHERIES	10,036	8,987	4,805
MINING	235	87	159
MANUFACTURING	51,575	61,868	73,476
FOOD + KINDRED PRODUCTS	1,628	1,751	2,809
TEXTILE MILL PRODUCTS	13,356	15,629	9,940
CHEMICALS + ALLIED PRODUCTS	169	317	367
PAPER + ALLIED PRODUCTS		2,340	2,285
PETROLEUM REFINING		47	51
PRIMARY METALS		714	1,152
ARMED FORCES	153	513	6,666
OTHER	63,225	78,353	96,025

WATER RESOURCES PLANNING AREA - MANCHESTER, N.H., NORTH ATLANTIC 0103

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	511,100	581,300	678,300	774,000	891,600	1,020,600
TOTAL PERSONAL INCOME(000-$58)	1,567,831	2,390,135	3,625,968	5,542,560	8,440,926	12,666,187
PER CAPITA INCOME($58)**	3067	4111	5346	7161	9467	12411
PER CAPITA RELATIVE(US=1.00)	1.01	1.00	1.00	1.00	1.00	1.00
TOTAL EARNINGS (000-$58) *	1,217,141	1,830,145	2,726,590	4,103,269	6,164,722	9,144,572
PER WORKER EARNINGS($58)**	5824	7544	9877	12945	17153	22572
PER WORKER RELATIVE(US=1.00)	.92	.93	.95	.95	.96	.97

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	511,100	581,300	678,300	774,000	891,600	1,020,600
TOTAL EMPLOYMENT	209,000	242,600	276,100	317,000	359,400	405,100
PARTICIPATION RATE(EMPL/POP)	.41	.42	.41	.41	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	3,700	2,900	2,400	2,000	1,700	1,400
MINING	D	D	D	D	D	D
MANUFACTURING	78,100	83,900	90,100	96,400	102,700	109,600
FOOD + KINDRED PRODUCTS	2,600	2,600	2,500	2,600	2,600	2,700
TEXTILE MILL PRODUCTS	7,800	6,800	6,100	5,400	4,800	4,300
CHEMICALS + ALLIED PRODUCTS	500	700	800	1,000	1,200	1,400
PAPER + ALLIED PRODUCTS	2,200	2,200	2,100	2,200	2,200	2,100
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	1,400	1,500	1,700	1,800	2,000	2,100
ARMED FORCES	5,500	5,300	5,300	5,300	5,300	5,300
OTHER	121,600	150,400	178,300	213,200	249,600	288,800

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - UPPER CONNECTICUT RIVER VALLEY, NORTH ATLANTIC 0104

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	254,510	259,215	266,114	270,851	278,287
TOTAL PERSONAL INCOME(000-$58)	281,382	298,721	384,571	481,756	535,785
PER CAPITA INCOME($58)	1106	1152	1445	1779	1925
PER CAPITA RELATIVE(US=1.00)	.870	.886	.801	.834	.853
TOTAL EARNINGS(000-$58) *	225,521	239,317	309,162	384,592	418,677
PER WORKER EARNINGS($58)		2604	3191	3714	
PER WORKER RELATIVE(US=1.00)		.855	.830	.815	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	257,884	266,074	274,548
TOTAL EMPLOYMENT	91,897	96,892	103,557
PARTICIPATION RATE(EMPL/POP)	.356	.364	.377
AGRICULTURE,FORESTRY + FISHERIES	16,821	13,314	7,957
MINING	259	381	189
MANUFACTURING	30,408	33,339	37,133
FOOD + KINDRED PRODUCTS	995	1,111	1,608
TEXTILE MILL PRODUCTS	4,167	4,934	3,659
CHEMICALS + ALLIED PRODUCTS	109	200	274
PAPER + ALLIED PRODUCTS		6,148	6,534
PETROLEUM REFINING		10	15
PRIMARY METALS		397	437
ARMED FORCES		79	246
OTHER	44,409	49,779	58,032

WATER RESOURCES PLANNING AREA - UPPER CONNECTICUT RIVER VALLEY, NORTH ATLANTIC 0104

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	284,800	302,600	326,800	349,600	375,500	404,300
TOTAL PERSONAL INCOME(000-$58)	741,966	1,071,341	1,530,568	2,258,787	3,335,093	4,844,202
PER CAPITA INCOME($58)**	2605	3540	4683	6462	8883	11982
PER CAPITA RELATIVE(US=1.00)	.86	.86	.88	.90	.94	.97
TOTAL EARNINGS (000-$58) *	575,441	826,202	1,169,230	1,708,824	2,498,786	3,604,091
PER WORKER EARNINGS($58)**	5138	6751	8890	11902	16120	21614
PER WORKER RELATIVE(US=1.00)	.81	.84	.86	.87	.90	.93

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	284,800	302,600	326,800	349,600	375,500	404,300
TOTAL EMPLOYMENT	112,000	122,400	131,500	143,600	155,000	166,700
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.41	.41	.41
AGRICULTURE,FORESTRY + FISHERIES	5,900	4,700	3,700	3,100	2,500	2,000
MINING	D	D	D	D	D	D
MANUFACTURING	38,400	39,600	40,900	42,400	43,800	45,500
FOOD + KINDRED PRODUCTS	1,500	1,500	1,600	1,500	1,500	1,500
TEXTILE MILL PRODUCTS	3,500	3,000	2,700	2,300	2,100	1,900
CHEMICALS + ALLIED PRODUCTS	400	500	700	900	1,200	1,500
PAPER + ALLIED PRODUCTS	5,000	4,800	4,500	4,400	4,300	4,200
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	600	700	800	800	900	900
ARMED FORCES	D	D	D	D	D	D
OTHER	67,400	77,900	86,600	97,900	108,500	119,100

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - BURLINGTON-RUTLAND, NORTH ATLANTIC 0105

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	244,749	248,239	261,645	270,723	275,558
TOTAL PERSONAL INCOME(000-$58)	281,250	270,228	353,450	466,876	515,920
PER CAPITA INCOME($58)	1149	1089	1351	1725	1872
PER CAPITA RELATIVE(US=100)	.904	.838	.748	.808	.829
TOTAL EARNINGS(000-$58) *	221,349	213,378	284,848	376,854	403,802
PER WORKER EARNINGS($58)		2541	3025	3811	
PER WORKER RELATIVE(US=100)		.834	.787	.836	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	245,661	260,780	272,739
TOTAL EMPLOYMENT	83,970	94,170	98,873
PARTICIPATION RATE(EMPL/POP)	.342	.361	.363
AGRICULTURE,FORESTRY + FISHERIES	21,036	17,382	12,157
MINING	1,320	1,605	927
MANUFACTURING	16,851	21,682	23,064
FOOD + KINDRED PRODUCTS	1,613	1,724	2,177
TEXTILE MILL PRODUCTS	2,804	2,980	670
CHEMICALS + ALLIED PRODUCTS	143	244	345
PAPER + ALLIED PRODUCTS		872	1,301
PETROLEUM REFINING		37	20
PRIMARY METALS		239	474
ARMED FORCES	1,433	329	925
OTHER	43,330	53,172	61,800

WATER RESOURCES PLANNING AREA - BURLINGTON-RUTLAND, NORTH ATLANTIC 0105 TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	291,600	320,400	356,700	392,400	432,500	477,200
TOTAL PERSONAL INCOME(000-$58)	718,622	1,062,216	1,539,779	2,296,142	3,421,781	5,029,436
PER CAPITA INCOME($58)**	2464	3316	4317	5852	7912	10540
PER CAPITA RELATIVE(US=1.00)	.81	.81	.81	.82	.84	.85
TOTAL EARNINGS (000-$58) *	565,755	839,447	1,216,513	1,810,754	2,693,083	3,958,891
PER WORKER EARNINGS($58)**	5108	6630	8589	11265	14983	19822
PER WORKER RELATIVE(US=1.00)	.81	.82	.83	.83	.84	.85

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	291,600	320,400	356,700	392,400	432,500	477,200
TOTAL EMPLOYMENT	110,800	126,600	141,600	160,700	179,700	199,700
PARTICIPATION RATE(EMPL/POP)	.38	.40	.40	.41	.42	.42
AGRICULTURE,FORESTRY + FISHERIES	9,900	8,600	7,400	6,500	5,600	4,800
MINING	700	600	500	500	400	400
MANUFACTURING	25,200	27,500	30,100	32,800	35,400	38,400
FOOD + KINDRED PRODUCTS	2,000	1,900	1,800	1,700	1,600	1,500
TEXTILE MILL PRODUCTS	600	500	400	400	300	300
CHEMICALS + ALLIED PRODUCTS	500	600	700	900	1,100	1,200
PAPER + ALLIED PRODUCTS	1,300	1,500	1,500	1,600	1,600	1,700
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	600	600	600	700	700	700
ARMED FORCES	400	400	400	400	400	400
OTHER	74,600	89,500	103,200	120,600	137,800	155,700

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - BOSTON, NORTH ATLANTIC 0106

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	4,337,197	4,460,536	4,831,339	5,248,893	5,340,681
TOTAL PERSONAL INCOME(000-$58)	7,234,862	7,665,803	9,526,991	12,206,472	13,527,361
PER CAPITA INCOME($58)	1668	1719	1972	2326	2533
PER CAPITA RELATIVE(US=1.00)	1.312	1.322	1.093	1.090	1.122
TOTAL EARNINGS(000-$58) *	5,220,824	5,723,518	7,631,713	9,875,302	10,874,509
PER WORKER EARNINGS($58)		3603	3997	4698	
PER WORKER RELATIVE(US=1.00)		1.183	1.039	1.031	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	4,453,773	4,841,132	5,278,485
TOTAL EMPLOYMENT	1,588,394	1,909,371	2,102,035
PARTICIPATION RATE(EMPL/POP)	.357	.394	.398
AGRICULTURE,FORESTRY + FISHERIES	38,052	35,548	25,408
MINING	1,321	1,406	1,219
MANUFACTURING	608,496	713,219	761,946
FOOD + KINDRED PRODUCTS	37,395	40,123	53,178
TEXTILE MILL PRODUCTS	166,861	159,483	75,478
CHEMICALS + ALLIED PRODUCTS	14,432	15,910	16,069
PAPER + ALLIED PRODUCTS		22,801	24,837
PETROLEUM REFINING		4,502	3,187
PRIMARY METALS		20,726	25,841
ARMED FORCES	7,969	35,220	60,201
OTHER	932,556	1,123,978	1,253,261

WATER RESOURCES PLANNING AREA - BOSTON, NORTH ATLANTIC 0106

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	5,815,900	6,422,100	7,193,300	7,941,700	8,774,800	9,717,100
TOTAL PERSONAL INCOME(000-$58)	19,380,775	28,136,724	40,781,812	59,495,991	86,861,351	125,143,729
PER CAPITA INCOME($58)**	3332	4381	5669	7492	9899	12879
PER CAPITA RELATIVE(US=1.00)	1.09	1.07	1.06	1.05	1.05	1.04
TOTAL EARNINGS (000-$58) *	15,292,204	22,139,299	31,836,045	46,133,522	66,983,578	96,098,711
PER WORKER EARNINGS($58)**	6506	8358	10754	14100	18533	24177
PER WORKER RELATIVE(US=1.00)	1.03	1.03	1.04	1.04	1.04	1.03

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	5,815,900	6,422,100	7,193,300	7,941,700	8,774,800	9,717,100
TOTAL EMPLOYMENT	2,350,400	2,648,800	2,960,400	3,272,000	3,614,200	3,974,900
PARTICIPATION RATE(EMPL/POP)	.40	.41	.41	.41	.41	.41
AGRICULTURE,FORESTRY + FISHERIES	21,800	19,300	17,100	15,400	13,500	11,700
MINING	900	800	700	600	600	500
MANUFACTURING	763,700	785,300	813,400	842,600	872,500	906,700
FOOD + KINDRED PRODUCTS	44,900	41,300	37,600	35,700	34,100	33,000
TEXTILE MILL PRODUCTS	50,600	39,200	31,800	25,800	21,200	17,700
CHEMICALS + ALLIED PRODUCTS	18,600	20,300	21,800	24,600	27,000	29,000
PAPER + ALLIED PRODUCTS	26,600	28,800	30,600	32,900	35,300	36,700
PETROLEUM REFINING	1,800	1,300	900	700	500	300
PRIMARY METALS	28,900	31,300	33,200	35,300	37,100	38,800
ARMED FORCES	49,300	47,500	47,500	47,500	47,500	47,500
OTHER	1,514,600	1,796,000	2,081,700	2,365,900	2,680,200	3,008,500

0 TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - HARTFORD-SPRINGFIELD, NORTH ATLANTIC 0107

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	2,169,803	2,284,464	2,656,661	3,248,107	3,372,319
TOTAL PERSONAL INCOME(000-$58)	3,670,084	4,212,289	5,721,408	8,090,226	9,119,779
PER CAPITA INCOME($58)	1691	1844	2154	2491	2704
PER CAPITA RELATIVE(US=1.00)	1.330	1.418	1.193	1.167	1.198
TOTAL EARNINGS(000-$58) *	2,674,479	3,236,196	4,598,767	6,558,167	7,259,484
PER WORKER EARNINGS($58)		3630	4197	5027	
PER WORKER RELATIVE(US=1.00)		1.192	1.091	1.103	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	2,285,536	2,648,558	3,264,815
TOTAL EMPLOYMENT	891,606	1,095,708	1,304,691
PARTICIPATION RATE(EMPL/POP)	.390	.414	.400
AGRICULTURE,FORESTRY + FISHERIES	37,720	34,396	24,944
MINING	1,014	781	1,386
MANUFACTURING	389,309	469,573	536,137
FOOD + KINDRED PRODUCTS	12,720	14,051	20,832
TEXTILE MILL PRODUCTS	50,553	54,652	25,716
CHEMICALS + ALLIED PRODUCTS	8,887	13,870	18,033
PAPER + ALLIED PRODUCTS		19,059	21,440
PETROLEUM REFINING		933	1,181
PRIMARY METALS		35,406	29,305
ARMED FORCES	1,578	11,391	21,815
OTHER	461,985	579,567	720,409

WATER RESOURCES PLANNING AREA - HARTFORD-SPRINGFIELD, NORTH ATLANTIC 0107

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,680,500	4,155,800	4,737,600	5,329,900	5,992,000	6,739,900
TOTAL PERSONAL INCOME(000-$58)	13,079,732	18,903,425	27,159,033	40,599,605	60,280,852	87,979,492
PER CAPITA INCOME($58)**	3554	4549	5733	7617	10060	13054
PER CAPITA RELATIVE(US=1.00)	1.17	1.11	1.07	1.06	1.06	1.05
TOTAL EARNINGS (000-$58) *	10,326,439	14,899,759	21,267,001	31,284,332	45,610,281	65,890,662
PER WORKER EARNINGS($58)**	6947	8780	11211	14554	18953	24575
PER WORKER RELATIVE(US=1.00)	1.10	1.09	1.08	1.07	1.06	1.05

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,680,500	4,155,800	4,737,600	5,329,900	5,992,000	6,739,900
TOTAL EMPLOYMENT	1,486,500	1,697,000	1,896,900	2,149,500	2,406,500	2,681,200
PARTICIPATION RATE(EMPL/POP)	.40	.41	.40	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	20,600	17,900	15,000	13,000	11,200	9,400
MINING	1,000	1,000	900	900	800	800
MANUFACTURING	543,700	555,000	568,900	585,300	602,600	623,300
FOOD + KINDRED PRODUCTS	19,500	19,200	19,100	18,900	18,700	18,700
TEXTILE MILL PRODUCTS	21,800	17,700	14,500	12,100	10,100	8,600
CHEMICALS + ALLIED PRODUCTS	22,500	26,600	31,100	38,100	45,200	52,200
PAPER + ALLIED PRODUCTS	24,800	28,400	31,300	34,400	37,700	40,800
PETROLEUM REFINING	1,000	900	700	600	600	500
PRIMARY METALS	26,200	22,800	19,800	17,600	16,600	16,000
ARMED FORCES	18,100	17,400	17,400	17,400	17,400	17,400
OTHER	903,000	1,105,800	1,294,700	1,532,900	1,774,500	2,030,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - PLATTSBURGH, NORTH ATLANTIC 0108

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	210,100	223,184	232,980	262,472	273,134
TOTAL PERSONAL INCOME(000-$58)	222,649	232,057	323,224	464,568	496,650
PER CAPITA INCOME($58)	1060	1040	1387	1770	1818
PER CAPITA RELATIVE(US=1.00)	.834	.800	.768	.829	.805
TOTAL EARNINGS(000-$58) *	175,503	188,233	263,246	384,916	393,745
PER WORKER EARNINGS($58)		2747	3535	4670	
PER WORKER RELATIVE(US=1.00)		.902	.919	1.025	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	223,568	232,435	264,003
TOTAL EMPLOYMENT	68,516	74,466	82,419
PARTICIPATION RATE(EMPL/POP)	.306	.320	.312
AGRICULTURE,FORESTRY + FISHERIES	17,156	14,030	8,255
MINING	1,404	2,570	2,756
MANUFACTURING	11,777	16,152	15,424
FOOD + KINDRED PRODUCTS	1,049	1,556	1,541
TEXTILE MILL PRODUCTS	262	52	24
CHEMICALS + ALLIED PRODUCTS	213	270	437
PAPER + ALLIED PRODUCTS		3,949	3,718
PETROLEUM REFINING		40	34
PRIMARY METALS		4,550	4,058
ARMED FORCES	2,013	84	5,268
OTHER	36,166	41,630	50,716

WATER RESOURCES PLANNING AREA - PLATTSBURGH, NORTH ATLANTIC 0108

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	294,300	294,600	305,800	315,300	330,600	352,400
TOTAL PERSONAL INCOME(000-$58)	744,108	1,041,690	1,454,823	2,077,279	2,973,256	4,285,878
PER CAPITA INCOME($58)**	2528	3536	4758	6588	8994	12163
PER CAPITA RELATIVE(US=1.00)	.83	.86	.89	.92	.95	.98
TOTAL EARNINGS (000-$58) *	559,569	792,726	1,107,120	1,580,809	2,256,701	3,244,410
PER WORKER EARNINGS($58)**	6382	8200	10500	13600	17800	23500
PER WORKER RELATIVE(US=1.00)	1.01	1.01	1.01	1.00	1.00	1.01

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	294,300	294,600	305,800	315,300	330,600	352,400
TOTAL EMPLOYMENT	87,700	96,700	105,400	116,200	126,800	138,100
PARTICIPATION RATE(EMPL/POP)	.30	.33	.34	.37	.38	.39
AGRICULTURE,FORESTRY + FISHERIES	6,500	5,500	4,500	3,800	3,200	2,700
MINING	2,100	2,100	2,000	2,000	1,900	1,900
MANUFACTURING	16,200	16,900	17,800	18,800	19,900	21,300
FOOD + KINDRED PRODUCTS	1,500	1,400	1,300	1,300	1,300	1,300
TEXTILE MILL PRODUCTS	D	D	D	D	D	D
CHEMICALS + ALLIED PRODUCTS	600	700	800	1,000	1,300	1,500
PAPER + ALLIED PRODUCTS	3,700	3,700	3,600	3,500	3,500	3,400
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	3,500	3,000	2,800	2,500	2,300	2,200
ARMED FORCES	4,500	4,300	4,300	4,300	4,300	4,300
OTHER	58,300	67,900	76,800	87,300	97,400	107,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - ALBANY-TROY-SCHENECTADY, NORTH ATLANTIC 0109

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	771,930	814,738	887,135	958,513	1,000,140
TOTAL PERSONAL INCOME(000-$58)	1,243,101	1,314,364	1,651,930	2,050,078	2,243,599
PER CAPITA INCOME($58)	1610	1613	1862	2139	2243
PER CAPITA RELATIVE(US=1.00)	1.267	1.241	1.032	1.002	.993
TOTAL EARNINGS(000-$58) *	944,068	1,073,990	1,370,198	1,694,108	1,820,701
PER WORKER EARNINGS($58)		3540	3868	4678	
PER WORKER RELATIVE(US=1.00)		1.162	1.006	1.027	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	816,139	885,058	964,102
TOTAL EMPLOYMENT	303,357	354,240	362,106
PARTICIPATION RATE(EMPL/POP)	.372	.400	.376
AGRICULTURE,FORESTRY + FISHERIES	28,296	20,996	14,395
MINING	738	763	753
MANUFACTURING	100,641	124,858	116,369
FOOD + KINDRED PRODUCTS	7,094	8,072	9,778
TEXTILE MILL PRODUCTS	19,446	20,983	11,375
CHEMICALS + ALLIED PRODUCTS	2,446	4,186	4,798
PAPER + ALLIED PRODUCTS		9,920	8,686
PETROLEUM REFINING		443	252
PRIMARY METALS		2,958	3,150
ARMED FORCES	105	529	928
OTHER	173,577	207,094	229,661

WATER RESOURCES PLANNING AREA - ALBANY-TROY-SCHENECTADY, NORTH ATLANTIC 0109

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,003,800	1,089,100	1,206,200	1,316,700	1,438,100	1,578,000
TOTAL PERSONAL INCOME(000-$58)	3,102,133	4,478,572	6,448,238	9,429,175	13,614,767	19,584,533
PER CAPITA INCOME($58)**	3090	4112	5346	7161	9467	12411
PER CAPITA RELATIVE(US=1.00)	1.01	1.00	1.00	1.00	1.00	1.00
TOTAL EARNINGS (000-$58) *	2,476,217	3,537,319	4,989,891	7,246,230	10,385,511	14,836,754
PER WORKER EARNINGS($58)**	6288	8080	10390	13615	17830	23360
PER WORKER RELATIVE(US=1.00)	1.00	1.00	1.00	1.00	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,003,800	1,089,100	1,206,200	1,316,700	1,438,100	1,578,000
TOTAL EMPLOYMENT	393,800	437,800	480,300	532,200	582,500	635,100
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.40	.41	.40
AGRICULTURE,FORESTRY + FISHERIES	11,100	9,400	7,800	6,700	5,700	4,800
MINING	500	500	500	400	400	400
MANUFACTURING	106,200	106,600	107,200	108,600	110,100	112,600
FOOD + KINDRED PRODUCTS	9,000	8,900	8,900	8,800	8,600	8,500
TEXTILE MILL PRODUCTS	9,800	8,200	6,700	5,700	4,800	4,100
CHEMICALS + ALLIED PRODUCTS	6,100	7,300	8,600	10,600	12,500	14,300
PAPER + ALLIED PRODUCTS	7,700	7,300	6,800	6,400	6,100	6,200
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	3,500	3,800	4,000	4,200	4,500	4,700
ARMED FORCES	4,700	4,600	4,600	4,600	4,600	4,600
OTHER	271,200	316,800	360,200	411,900	461,700	512,800

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - SYRACUSE-UTICA, NORTH ATLANTIC 0110

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	848,344	882,067	976,709	1,123,623	1,180,539
TOTAL PERSONAL INCOME(000-$58)	1,204,469	1,240,595	1,729,667	2,312,328	2,554,262
PER CAPITA INCOME($58)	1420	1406	1771	2058	2164
PER CAPITA RELATIVE(US=1.00)	1.117	1.082	.981	.964	.958
TOTAL EARNINGS(000-$58) *	939,628	1,010,086	1,425,837	1,901,847	2,083,969
PER WORKER EARNINGS($58)		3212	3847	4579	
PER WORKER RELATIVE(US=1.00)		1.054	1.000	1.005	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	883,583	974,422	1,130,176
TOTAL EMPLOYMENT	314,442	370,607	415,341
PARTICIPATION RATE(EMPL/POP)	.356	.380	.368
AGRICULTURE,FORESTRY + FISHERIES	41,583	32,737	22,547
MINING	558	489	894
MANUFACTURING	104,538	129,270	139,467
FOOD + KINDRED PRODUCTS	8,151	9,592	11,542
TEXTILE MILL PRODUCTS	15,312	13,409	4,648
CHEMICALS + ALLIED PRODUCTS	4,033	5,307	5,554
PAPER + ALLIED PRODUCTS		8,721	8,925
PETROLEUM REFINING		397	369
PRIMARY METALS		11,306	9,729
ARMED FORCES	1,574	1,096	5,171
OTHER	166,189	207,015	247,262

WATER RESOURCES PLANNING AREA - SYRACUSE-UTICA, NORTH ATLANTIC 0110

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,234,900	1,373,800	1,538,300	1,704,200	1,895,100	2,116,300
TOTAL PERSONAL INCOME(000-$58)	3,610,877	5,443,840	7,899,402	11,796,760	17,414,428	25,791,556
PER CAPITA INCOME($58)**	2924	3962	5135	6922	9189	12187
PER CAPITA RELATIVE(US=1.00)	.96	.96	.96	.97	.97	.98
TOTAL EARNINGS (000-$58) *	2,990,636	4,318,821	6,186,671	9,131,607	13,371,519	19,670,053
PER WORKER EARNINGS($58)**	6321	7978	10269	13405	17523	23105
PER WORKER RELATIVE(US=1.00)	1.00	.99	.99	.98	.98	.99

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,234,900	1,373,800	1,538,300	1,704,200	1,895,100	2,116,300
TOTAL EMPLOYMENT	473,100	541,300	602,400	681,200	763,100	851,300
PARTICIPATION RATE(EMPL/POP)	.38	.39	.39	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	17,900	15,300	12,700	11,000	9,400	7,800
MINING	700	600	600	600	600	500
MANUFACTURING	150,000	160,800	170,100	180,800	191,700	203,900
FOOD + KINDRED PRODUCTS	11,000	10,600	10,000	9,900	9,900	9,800
TEXTILE MILL PRODUCTS	3,800	3,100	2,600	2,200	1,900	1,700
CHEMICALS + ALLIED PRODUCTS	6,700	7,700	8,600	10,100	11,500	12,700
PAPER + ALLIED PRODUCTS	8,200	8,100	8,100	8,000	7,900	8,100
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	7,600	6,200	5,400	5,300	5,300	5,400
ARMED FORCES	4,800	4,700	4,700	4,700	4,700	4,700
OTHER	299,700	359,900	414,400	484,100	556,800	634,500

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - ROCHESTER-GENESEE, NORTH ATLANTIC 0111

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	752,381	799,387	879,367	1,007,733	1,056,360
TOTAL PERSONAL INCOME(000-$58)	1,172,289	1,288,405	1,733,805	2,389,979	2,611,780
PER CAPITA INCOME($58)	1558	1612	1972	2372	2472
PER CAPITA RELATIVE(US=1.00)	1.226	1.240	1.093	1.112	1.095
TOTAL EARNINGS(000-$58) *	875,517	1,024,535	1,411,038	1,945,892	2,081,109
PER WORKER EARNINGS($58)		3537	4101	5071	
PER WORKER RELATIVE(US=1.00)		1.161	1.066	1.113	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	800,762	877,307	1,013,610
TOTAL EMPLOYMENT	289,656	344,064	383,719
PARTICIPATION RATE(EMPL/POP)	.362	.392	.379
AGRICULTURE,FORESTRY + FISHERIES	39,379	30,305	20,976
MINING	2,816	2,416	1,404
MANUFACTURING	97,562	130,450	151,593
FOOD + KINDRED PRODUCTS	9,904	12,827	15,449
TEXTILE MILL PRODUCTS	2,667	2,740	2,286
CHEMICALS + ALLIED PRODUCTS	1,978	2,593	2,889
PAPER + ALLIED PRODUCTS		2,985	3,276
PETROLEUM REFINING		1,294	587
PRIMARY METALS		2,681	2,279
ARMED FORCES	32	295	354
OTHER	149,867	180,598	209,392

WATER RESOURCES PLANNING AREA - ROCHESTER-GENESEE, NORTH ATLANTIC 0111 TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,135,700	1,260,100	1,408,400	1,557,700	1,724,600	1,921,400
TOTAL PERSONAL INCOME(000-$58)	3,688,651	5,343,031	7,616,739	11,150,405	16,412,702	24,200,814
PER CAPITA INCOME($58)**	3248	4240	5408	7158	9517	12596
PER CAPITA RELATIVE(US=1.00)	1.07	1.03	1.01	1.00	1.01	1.01
TOTAL EARNINGS (000-$58) *	2,925,245	4,202,395	5,917,428	8,580,313	12,516,586	18,335,754
PER WORKER EARNINGS($58)**	6571	8269	10496	13536	17747	23442
PER WORKER RELATIVE(US=1.00)	1.04	1.02	1.01	.99	1.00	1.00

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,135,700	1,260,100	1,408,400	1,557,700	1,724,600	1,921,400
TOTAL EMPLOYMENT	445,200	508,200	563,800	633,900	705,300	782,200
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.41	.41	.41
AGRICULTURE,FORESTRY + FISHERIES	16,200	13,900	11,200	9,600	8,100	6,700
MINING	1,000	800	700	600	600	500
MANUFACTURING	172,000	188,700	204,900	222,500	240,300	259,900
FOOD + KINDRED PRODUCTS	14,500	14,000	13,500	13,000	12,500	12,100
TEXTILE MILL PRODUCTS	2,700	2,500	2,400	2,200	2,100	2,000
CHEMICALS + ALLIED PRODUCTS	3,400	3,800	4,300	4,900	5,500	6,100
PAPER + ALLIED PRODUCTS	3,700	4,200	4,600	5,100	5,500	5,900
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	2,300	2,200	2,200	2,100	2,100	2,000
ARMED FORCES	D	D	D	D	D	D
OTHER	255,700	304,600	346,700	400,900	456,100	514,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - BINGHAMTON-ELMIRA, NORTH ATLANTIC 0112

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	654,119	700,664	775,502	843,898	873,602
TOTAL PERSONAL INCOME(000-$58)	830,368	867,727	1,272,911	1,665,948	1,814,505
PER CAPITA INCOME($58)	1269	1238	1641	1974	2077
PER CAPITA RELATIVE(US=1.00)	.998	.952	.909	.925	.920
TOTAL EARNINGS(000-$58) *	641,283	693,138	1,039,229	1,371,575	1,447,387
PER WORKER EARNINGS($58)		2816	3580	4360	
PER WORKER RELATIVE(US=1.00)		.924	.931	.957	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	701,691	773,889	849,065
TOTAL EMPLOYMENT	246,128	290,312	314,587
PARTICIPATION RATE(EMPL/POP)	.351	.375	.371
AGRICULTURE,FORESTRY + FISHERIES	48,374	42,128	28,099
MINING	1,858	1,130	1,112
MANUFACTURING	70,593	94,523	115,122
FOOD + KINDRED PRODUCTS	5,389	6,526	7,113
TEXTILE MILL PRODUCTS	4,443	3,678	1,909
CHEMICALS + ALLIED PRODUCTS	1,865	1,507	2,289
PAPER + ALLIED PRODUCTS		1,646	1,231
PETROLEUM REFINING		56	91
PRIMARY METALS		3,393	2,963
ARMED FORCES		303	293
OTHER	125,303	152,228	169,961

WATER RESOURCES PLANNING AREA - BINGHAMTON-ELMIRA, NORTH ATLANTIC 0112

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	940,400	1,046,000	1,168,400	1,306,900	1,464,700	1,639,800
TOTAL PERSONAL INCOME(000-$58)	2,634,889	3,999,908	5,871,175	8,890,834	13,310,948	19,740,406
PER CAPITA INCOME($58)**	2802	3824	5025	6803	9088	12038
PER CAPITA RELATIVE(US=1.00)	.92	.93	.94	.95	.96	.97
TOTAL EARNINGS (000-$58) *	2,182,304	3,216,130	4,601,323	6,913,434	10,265,807	15,102,821
PER WORKER EARNINGS($58)**	6058	7797	10078	13275	17473	23010
PER WORKER RELATIVE(US=1.00)	.96	.96	.97	.98	.98	.99

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	940,400	1,046,000	1,168,400	1,306,900	1,464,700	1,639,800
TOTAL EMPLOYMENT	360,200	412,500	456,600	520,800	587,500	656,400
PARTICIPATION RATE(EMPL/POP)	.38	.39	.39	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	22,300	18,800	15,500	13,300	11,200	9,300
MINING	800	700	600	500	500	500
MANUFACTURING	130,800	148,000	160,000	175,800	192,000	209,300
FOOD + KINDRED PRODUCTS	6,400	6,300	6,200	6,100	6,000	5,900
TEXTILE MILL PRODUCTS	1,700	1,400	1,100	900	800	700
CHEMICALS + ALLIED PRODUCTS	2,800	3,200	3,600	4,200	4,800	5,300
PAPER + ALLIED PRODUCTS	900	900	800	800	700	700
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	2,600	2,300	2,000	1,900	1,700	1,700
ARMED FORCES	300	300	300	300	300	300
OTHER	206,100	244,800	280,100	330,900	383,500	437,000

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - ALLENTOWN-BETHLEHEM, NORTH ATLANTIC 0113

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,139,243	1,157,009	1,206,523	1,299,905	1,334,787
TOTAL PERSONAL INCOME(000-$58)	1,393,168	1,458,201	2,159,076	2,646,663	2,891,205
PER CAPITA INCOME($58)	1223	1260	1790	2036	2166
PER CAPITA RELATIVE(US=1.00)	.962	.969	.992	.954	.959
TOTAL EARNINGS(000-$58) *	1,109,836	1,192,817	1,775,574	2,146,018	2,329,314
PER WORKER EARNINGS($58)		3021	3649	4190	
PER WORKER RELATIVE(US=1.00)		.992	.949	.920	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,157,193	1,204,408	1,309,661
TOTAL EMPLOYMENT	394,802	486,599	512,223
PARTICIPATION RATE(EMPL/POP)	.341	.404	.391
AGRICULTURE,FORESTRY + FISHERIES	35,404	30,186	19,416
MINING	27,619	27,729	7,921
MANUFACTURING	150,137	195,926	220,937
FOOD + KINDRED PRODUCTS	9,017	10,477	14,612
TEXTILE MILL PRODUCTS	41,200	35,937	22,345
CHEMICALS + ALLIED PRODUCTS	3,708	5,974	7,784
PAPER + ALLIED PRODUCTS		5,550	5,971
PETROLEUM REFINING		1,184	1,018
PRIMARY METALS		34,763	35,293
ARMED FORCES		361	846
OTHER	181,642	232,397	263,103

WATER RESOURCES PLANNING AREA - ALLENTOWN-BETHLEHEM, NORTH ATLANTIC 0113

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,408,400	1,501,900	1,591,700	1,721,200	1,859,000	2,000,600
TOTAL PERSONAL INCOME(000-$58)	4,161,956	6,052,814	8,424,699	12,325,334	17,598,803	24,829,819
PER CAPITA INCOME($58)**	2955	4030	5293	7161	9467	12411
PER CAPITA RELATIVE(US=1.00	.97	.98	.99	1.00	1.00	1.00
TOTAL EARNINGS (000-$58) *	3,191,937	4,469,385	6,219,672	8,904,375	12,727,947	18,132,924
PER WORKER EARNINGS($58)**	5805	7514	9767	12934	17117	22659
PER WORKER RELATIVE(US=1.00)	.92	.93	.94	.95	.96	.97

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,408,400	1,501,900	1,591,700	1,721,200	1,859,000	2,000,600
TOTAL EMPLOYMENT	549,900	594,800	636,800	688,400	743,600	800,300
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	14,900	12,200	9,800	8,200	6,800	5,600
MINING	3,300	2,400	2,000	1,600	1,400	1,200
MANUFACTURING	233,900	245,800	256,000	267,900	279,800	292,900
FOOD + KINDRED PRODUCTS	14,300	13,800	13,200	12,800	12,400	12,000
TEXTILE MILL PRODUCTS	18,100	14,100	11,800	9,700	8,100	6,900
CHEMICALS + ALLIED PRODUCTS	9,900	11,800	13,700	16,600	19,400	22,200
PAPER + ALLIED PRODUCTS	6,500	7,000	7,300	7,600	8,000	8,300
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	35,200	33,900	32,500	32,200	31,800	31,500
ARMED FORCES	800	800	800	800	800	800
OTHER	296,900	333,700	368,200	409,900	454,800	499,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - NEW YORK CITY, NORTH ATLANTIC 0114

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	10,944,484	12,094,970	13,496,979	15,383,466	16,127,590
TOTAL PERSONAL INCOME(000-$58)	24,625,394	24,886,969	32,693,027	43,611,004	48,775,927
PER CAPITA INCOME($58)	2250	2058	2422	2835	3024
PER CAPITA RELATIVE(US=1.00)	1.770	1.583	1.342	1.328	1.339
TOTAL EARNINGS(000-$58) *	16,876,423	18,855,341	26,785,853	35,571,948	39,310,746
PER WORKER EARNINGS($58)		4122	4829	5657	
PER WORKER RELATIVE(US=1.00)		1.353	1.256	1.242	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	12,099,287	13,446,664	15,485,294
TOTAL EMPLOYMENT	4,574,601	5,547,311	6,288,084
PARTICIPATION RATE(EMPL/POP)	.378	.413	.406
AGRICULTURE,FORESTRY + FISHERIES	48,672	48,976	37,634
MINING	4,126	4,398	7,281
MANUFACTURING	1,317,028	1,695,925	1,914,305
FOOD + KINDRED PRODUCTS	108,302	123,647	160,466
TEXTILE MILL PRODUCTS	110,168	102,364	81,130
CHEMICALS + ALLIED PRODUCTS	79,614	109,717	132,659
PAPER + ALLIED PRODUCTS		46,507	56,305
PETROLEUM REFINING		34,739	22,937
PRIMARY METALS		40,581	50,782
ARMED FORCES	24,508	36,421	39,680
OTHER	3,180,267	3,761,591	4,289,184

WATER RESOURCES PLANNING AREA - NEW YORK CITY, NORTH ATLANTIC 0114

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	17,140,900	18,905,400	20,875,900	22,925,200	25,123,700	27,532,700
TOTAL PERSONAL INCOME(000-$58)	66,380,446	97,173,525	137,280,122	200,274,573	285,405,709	403,216,142
PER CAPITA INCOME($58)**	3873	5140	6576	8736	11360	14645
PER CAPITA RELATIVE(US=1.00)	1.27	1.25	1.23	1.22	1.20	1.18
TOTAL EARNINGS (000-$58) *	53,907,552	76,946,787	106,833,235	154,188,127	219,144,100	309,428,283
PER WORKER EARNINGS($58)**	7572	9615	12260	15930	20683	26864
PER WORKER RELATIVE(US=1.00)	1.20	1.19	1.18	1.17	1.16	1.15

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	17,140,900	18,905,400	20,875,900	22,925,200	25,123,700	27,532,700
TOTAL EMPLOYMENT	7,119,300	8,002,800	8,714,000	9,679,100	10,595,400	11,518,300
PARTICIPATION RATE(EMPL/POP)	.42	.42	.42	.42	.42	.42
AGRICULTURE,FORESTRY + FISHERIES	31,800	28,200	24,500	21,800	19,100	16,300
MINING	5,500	5,200	5,100	4,900	4,700	4,500
MANUFACTURING	1,922,100	1,915,100	1,893,900	1,899,500	1,910,500	1,933,500
FOOD + KINDRED PRODUCTS	149,400	144,300	139,500	136,500	133,200	131,500
TEXTILE MILL PRODUCTS	76,800	66,500	57,400	50,200	44,100	39,000
CHEMICALS + ALLIED PRODUCTS	147,200	151,000	152,100	168,100	183,200	197,300
PAPER + ALLIED PRODUCTS	59,200	61,300	62,100	64,600	68,400	72,000
PETROLEUM REFINING	14,100	9,800	6,500	4,900	3,900	2,900
PRIMARY METALS	60,100	66,900	71,600	77,000	81,800	86,200
ARMED FORCES	31,500	30,400	30,400	30,400	30,400	30,400
OTHER	5,128,300	6,023,900	6,760,100	7,722,500	8,630,700	9,533,600

0 TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - WILLIAMSPORT, PA., NORTH ATLANTIC 0115

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	378,145	395,859	410,580	427,454	434,497
TOTAL PERSONAL INCOME(000-$58)	346,174	401,511	635,727	750,135	772,034
PER CAPITA INCOME($58)	915	1014	1548	1755	1777
PER CAPITA RELATIVE(US=1.00)	.720	.780	.858	.822	.787
TOTAL EARNINGS(000-$58) *	275,637	323,295	509,088	593,461	607,780
PER WORKER EARNINGS($58)		2877	3572	4033	
PER WORKER RELATIVE(US=1.00)		.945	.929	.885	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	396,028	410,228	430,703
TOTAL EMPLOYMENT	112,389	142,511	147,168
PARTICIPATION RATE(EMPL/POP)	.284	.347	.342
AGRICULTURE,FORESTRY + FISHERIES	12,514	10,581	6,804
MINING	12,738	11,411	4,856
MANUFACTURING	32,441	47,955	53,268
FOOD + KINDRED PRODUCTS	1,914	2,368	2,941
TEXTILE MILL PRODUCTS	3,934	3,740	2,889
CHEMICALS + ALLIED PRODUCTS	440	783	1,027
PAPER + ALLIED PRODUCTS		3,382	3,828
PETROLEUM REFINING		133	46
PRIMARY METALS		2,668	3,431
ARMED FORCES		186	326
OTHER	54,696	72,378	81,914

WATER RESOURCES PLANNING AREA - WILLIAMSPORT, PA., NORTH ATLANTIC 0115

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	448,800	491,100	548,200	595,400	650,600	715,100
TOTAL PERSONAL INCOME(000-$58)	1,103,537	1,619,464	2,401,544	3,705,350	5,565,994	8,364,387
PER CAPITA INCOME($58)**	2459	3298	4381	6223	8555	11697
PER CAPITA RELATIVE(US=1.00)	.81	.80	.82	.87	.90	.94
TOTAL EARNINGS (000-$58) *	865,224	1,261,038	1,845,802	2,817,702	4,191,840	6,247,027
PER WORKER EARNINGS($58)**	5294	6796	8951	12245	16535	22341
PER WORKER RELATIVE(US=1.00)	.84	.84	.86	.90	.93	.96

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	448,800	491,100	548,200	595,400	650,600	715,100
TOTAL EMPLOYMENT	163,400	185,500	206,200	230,100	253,500	279,600
PARTICIPATION RATE(EMPL/POP)	.36	.38	.38	.39	.39	.39
AGRICULTURE,FORESTRY + FISHERIES	5,500	4,600	3,800	3,200	2,700	2,300
MINING	2,500	2,000	1,700	1,400	1,200	1,000
MANUFACTURING	55,200	57,700	59,600	62,000	64,400	67,400
FOOD + KINDRED PRODUCTS	2,800	2,800	2,800	2,800	2,700	2,700
TEXTILE MILL PRODUCTS	2,800	2,500	2,200	1,900	1,700	1,500
CHEMICALS + ALLIED PRODUCTS	1,300	1,700	2,000	2,500	3,100	3,600
PAPER + ALLIED PRODUCTS	3,400	3,400	3,400	3,200	3,200	3,100
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	4,100	4,600	5,000	5,500	5,900	6,300
ARMED FORCES	300	300	300	300	300	300
OTHER	100,000	121,000	140,900	163,200	184,900	208,600

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - YORK-LANCASTER-HARRISBURG, NORTH ATLANTIC 0116

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	2,023,465	2,061,898	2,066,588	2,121,223	2,144,025
TOTAL PERSONAL INCOME(000-$58)	2,260,498	2,322,804	3,379,718	4,023,627	4,245,771
PER CAPITA INCOME($58)	1117	1127	1635	1897	1980
PER CAPITA RELATIVE(US=1.00)	.879	.867	.906	.889	.877
TOTAL EARNINGS(000-$58) *	1,809,713	1,881,282	2,739,159	3,260,990	3,404,620
PER WORKER EARNINGS($58)		2934	3521	4072	
PER WORKER RELATIVE(US=1.00)		.963	.915	.894	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	2,062,771	2,064,821	2,137,339
TOTAL EMPLOYMENT	641,309	777,953	800,878
PARTICIPATION RATE(EMPL/POP)	.311	.377	.375
AGRICULTURE,FORESTRY + FISHERIES	63,896	56,127	40,079
MINING	73,396	57,328	15,807
MANUFACTURING	178,062	246,387	287,724
FOOD + KINDRED PRODUCTS	19,450	24,312	30,334
TEXTILE MILL PRODUCTS	35,329	38,851	20,905
CHEMICALS + ALLIED PRODUCTS	5,460	5,225	7,852
PAPER + ALLIED PRODUCTS		6,685	8,093
PETROLEUM REFINING		749	631
PRIMARY METALS		19,723	18,369
ARMED FORCES	1,964	5,027	2,975
OTHER	323,991	413,084	454,293

WATER RESOURCES PLANNING AREA - YORK-LANCASTER-HARRISBURG, NORTH ATLANTIC 0116

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,339,200	2,608,700	2,944,700	3,272,800	3,644,900	4,071,100
TOTAL PERSONAL INCOME(000-$58)	6,258,213	9,447,303	14,041,809	21,025,126	31,625,942	46,995,312
PER CAPITA INCOME($58)**	2675	3621	4769	6424	8677	11544
PER CAPITA RELATIVE(US=1.00)	.88	.88	.89	.90	.92	.93
TOTAL EARNINGS (000-$58) *	5,129,958	7,533,435	10,988,196	16,284,039	24,317,245	35,904,485
PER WORKER EARNINGS($58)**	5597	7191	9387	12316	16473	21887
PER WORKER RELATIVE(US=1.00)	.89	.89	.90	.90	.92	.94

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,339,200	2,608,700	2,944,700	3,272,800	3,644,900	4,071,100
TOTAL EMPLOYMENT	916,600	1,047,600	1,170,500	1,322,200	1,476,200	1,640,400
PARTICIPATION RATE(EMPL/POP)	.39	.40	.40	.40	.41	.40
AGRICULTURE,FORESTRY + FISHERIES	32,800	28,500	24,200	21,200	18,300	15,400
MINING	7,400	5,600	4,500	3,700	3,100	2,600
MANUFACTURING	324,200	354,400	380,500	410,600	441,300	474,800
FOOD + KINDRED PRODUCTS	29,300	28,500	27,700	26,900	26,100	25,300
TEXTILE MILL PRODUCTS	19,100	15,900	13,200	11,200	9,500	8,200
CHEMICALS + ALLIED PRODUCTS	8,700	9,000	9,300	10,100	10,700	11,200
PAPER + ALLIED PRODUCTS	9,800	11,600	12,900	14,500	16,100	17,600
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	17,100	16,200	15,400	14,800	14,300	13,800
ARMED FORCES	3,500	3,400	3,400	3,400	3,400	3,400
OTHER	548,500	655,700	757,900	883,300	1,010,100	1,144,200

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - PHILADELPHIA, NORTH ATLANTIC 0117

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	3,894,711	4,000,910	4,630,818	5,541,494	5,775,462
TOTAL PERSONAL INCOME(000-$58)	6,627,534	7,044,204	9,679,794	13,561,446	14,742,786
PER CAPITA INCOME($58)	1702	1761	2090	2447	2553
PER CAPITA RELATIVE(US=1.00)	1.339	1.355	1.158	1.147	1.131
TOTAL EARNINGS(000-$58) *	4,522,124	5,447,827	7,855,905	11,084,836	11,974,595
PER WORKER EARNINGS($58)		3735	4260	5114	
PER WORKER RELATIVE(US=1.00)		1.226	1.108	1.122	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	3,996,016	4,616,527	5,587,226
TOTAL EMPLOYMENT	1,458,493	1,844,113	2,167,477
PARTICIPATION RATE(EMPL/POP)	.365	.399	.388
AGRICULTURE,FORESTRY + FISHERIES	62,269	59,622	41,879
MINING	2,280	2,161	2,748
MANUFACTURING	520,419	650,717	759,817
FOOD + KINDRED PRODUCTS	41,826	53,684	70,326
TEXTILE MILL PRODUCTS	70,767	71,574	37,732
CHEMICALS + ALLIED PRODUCTS	34,360	48,815	74,401
PAPER + ALLIED PRODUCTS		21,362	24,516
PETROLEUM REFINING		22,280	26,418
PRIMARY METALS		38,441	42,385
ARMED FORCES	5,188	34,418	64,812
OTHER	868,337	1,097,695	1,298,221

WATER RESOURCES PLANNING AREA - PHILADELPHIA, NORTH ATLANTIC 0117

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	6,336,400	7,152,600	8,178,700	9,183,100	10,313,800	11,602,800
TOTAL PERSONAL INCOME(000-$58)	21,670,324	31,386,835	45,804,069	68,059,812	100,699,191	148,247,206
PER CAPITA INCOME($58)**	3420	4388	5600	7411	9764	12777
PER CAPITA RELATIVE(US=1.00)	1.12	1.07	1.05	1.03	1.03	1.03
TOTAL EARNINGS (000-$58) *	17,339,684	25,039,717	36,289,498	53,578,493	78,785,153	115,383,116
PER WORKER EARNINGS($58)**	6923	8723	11260	14668	19264	25324
PER WORKER RELATIVE(US=1.00)	1.10	1.08	1.08	1.08	1.08	1.08

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	6,336,400	7,152,600	8,178,700	9,183,100	10,313,800	11,602,800
TOTAL EMPLOYMENT	2,504,700	2,870,500	3,222,700	3,652,700	4,089,700	4,556,300
PARTICIPATION RATE(EMPL/POP)	.40	.40	.39	.40	.40	.39
AGRICULTURE,FORESTRY + FISHERIES	35,600	31,500	27,400	24,400	21,300	18,300
MINING	1,100	700	600	500	400	300
MANUFACTURING	809,800	858,200	902,700	953,300	1,004,400	1,060,700
FOOD + KINDRED PRODUCTS	70,200	68,400	65,800	63,700	61,600	59,700
TEXTILE MILL PRODUCTS	30,500	23,600	19,800	16,300	13,700	11,500
CHEMICALS + ALLIED PRODUCTS	96,600	118,200	141,900	173,200	204,700	235,700
PAPER + ALLIED PRODUCTS	29,100	33,900	37,700	42,000	46,400	50,200
PETROLEUM REFINING	20,000	18,500	16,100	14,500	12,600	10,700
PRIMARY METALS	45,500	46,700	47,300	49,600	51,400	53,200
ARMED FORCES	63,100	60,800	60,800	60,800	60,800	60,800
OTHER	1,595,100	1,919,300	2,231,300	2,613,800	3,002,800	3,416,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - BALTIMORE, NORTH ATLANTIC 0118

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,228,210	1,356,709	1,642,818	1,976,544	2,042,429
TOTAL PERSONAL INCOME(000-$58)	1,881,744	2,263,712	3,242,252	4,393,622	4,931,235
PER CAPITA INCOME($58)	1532	1669	1974	2223	2414
PER CAPITA RELATIVE(US=1.00)	1.205	1.284	1.094	1.042	1.069
TOTAL EARNINGS(000-$58) *	1,329,545	1,776,156	2,690,777	3,667,055	4,099,932
PER WORKER EARNINGS($58)		3361	4060	4779	
PER WORKER RELATIVE(US=1.00)		1.103	1.056	1.049	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,343,609	1,634,448	1,998,907
TOTAL EMPLOYMENT	528,510	662,703	767,308
PARTICIPATION RATE(EMPL/POP)	.393	.405	.384
AGRICULTURE,FORESTRY + FISHERIES	44,521	35,228	23,420
MINING	803	922	800
MANUFACTURING	154,477	185,576	229,856
FOOD + KINDRED PRODUCTS	20,724	25,074	30,939
TEXTILE MILL PRODUCTS	3,759	4,045	2,548
CHEMICALS + ALLIED PRODUCTS	7,825	12,115	13,033
PAPER + ALLIED PRODUCTS		3,659	5,749
PETROLEUM REFINING		3,402	2,183
PRIMARY METALS		32,446	41,223
ARMED FORCES	9,483	20,711	26,840
OTHER	319,226	420,266	486,392

WATER RESOURCES PLANNING AREA - BALTIMORE, NORTH ATLANTIC 0118

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,353,800	2,503,300	2,786,300	3,088,300	3,414,700	3,783,300
TOTAL PERSONAL INCOME(000-$58)	7,814,748	11,117,305	15,937,423	23,443,184	33,941,808	48,830,742
PER CAPITA INCOME($58)**	3320	4441	5720	7591	9940	12907
PER CAPITA RELATIVE(US=1.00)	1.09	1.08	1.07	1.06	1.05	1.04
TOTAL EARNINGS (000-$58) *	6,120,972	8,947,107	12,797,001	18,823,460	27,261,587	39,378,649
PER WORKER EARNINGS($58)**	6859	8693	11001	14347	18697	24357
PER WORKER RELATIVE(US=1.00)	1.09	1.08	1.06	1.05	1.05	1.04

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	2,353,800	2,503,300	2,786,300	3,088,300	3,414,700	3,783,300
TOTAL EMPLOYMENT	892,400	1,029,200	1,163,200	1,312,000	1,458,000	1,616,700
PARTICIPATION RATE(EMPL/POP)	.38	.41	.42	.42	.43	.43
AGRICULTURE,FORESTRY + FISHERIES	18,200	15,000	12,300	10,300	8,600	7,000
MINING	700	700	700	700	700	700
MANUFACTURING	256,400	282,700	307,700	334,900	362,600	392,500
FOOD + KINDRED PRODUCTS	30,300	29,800	29,400	29,100	29,300	29,200
TEXTILE MILL PRODUCTS	1,900	1,600	1,400	1,200	1,000	900
CHEMICALS + ALLIED PRODUCTS	16,700	20,400	24,200	29,800	35,100	40,000
PAPER + ALLIED PRODUCTS	8,500	11,500	14,300	17,600	21,400	25,200
PETROLEUM REFINING	1,700	1,300	1,000	800	600	500
PRIMARY METALS	45,100	48,600	51,500	54,500	57,200	59,600
ARMED FORCES	26,600	25,600	25,600	25,600	25,600	25,600
OTHER	590,600	705,200	817,000	940,500	1,060,600	1,190,900

0 TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - WASHINGTON, D.C.-POTOMAC, NORTH ATLANTIC 0119

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	1,218,723	1,596,139	2,119,801	2,728,432	2,920,363
TOTAL PERSONAL INCOME(000-$58)	1,813,912	2,896,959	4,527,977	6,522,220	7,615,109
PER CAPITA INCOME($58)	1488	1815	2136	2390	2608
PER CAPITA RELATIVE(US=1.00)	1.171	1.396	1.183	1.120	1.155
TOTAL EARNINGS(000-$58) *	1,357,567	2,310,331	3,686,709	5,378,318	6,269,753
PER WORKER EARNINGS($58)		3712	4114	4832	
PER WORKER RELATIVE(US=1.00)		1.219	1.070	1.061	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	1,560,665	2,112,898	2,747,125
TOTAL EMPLOYMENT	622,319	896,096	1,113,067
PARTICIPATION RATE(EMPL/POP)	.399	.424	.405
AGRICULTURE, FORESTRY + FISHERIES	63,909	52,470	35,720
MINING	5,507	4,111	2,735
MANUFACTURING	74,606	95,255	120,696
FOOD + KINDRED PRODUCTS	7,702	9,543	14,173
TEXTILE MILL PRODUCTS	5,700	4,653	2,908
CHEMICALS + ALLIED PRODUCTS	11,261	9,115	8,486
PAPER + ALLIED PRODUCTS		2,504	3,307
PETROLEUM REFINING		265	413
PRIMARY METALS		1,136	1,322
ARMED FORCES	16,924	57,055	78,277
OTHER	461,373	687,205	875,639

WATER RESOURCES PLANNING AREA - WASHINGTON, D.C.-POTOMAC, NORTH ATLANTIC 0119

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,414,100	4,139,700	5,063,600	5,978,100	7,005,100	8,221,200
TOTAL PERSONAL INCOME(000-$58)	13,275,898	20,421,915	31,407,630	49,237,874	75,620,456	114,802,611
PER CAPITA INCOME($58)**	3889	4933	6203	8236	10795	13964
PER CAPITA RELATIVE(US=1.00)	1.28	1.20	1.16	1.15	1.14	1.13
TOTAL EARNINGS (000-$58) *	10,412,325	15,859,749	24,078,214	37,376,089	56,891,332	85,772,682
PER WORKER EARNINGS($58)**	7405	9055	11335	14634	18932	24411
PER WORKER RELATIVE(US=1.00)	1.17	1.12	1.09	1.07	1.06	1.04

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	3,414,100	4,139,700	5,063,600	5,978,100	7,005,100	8,221,200
TOTAL EMPLOYMENT	1,406,100	1,751,500	2,124,300	2,554,100	3,005,100	3,513,700
PARTICIPATION RATE(EMPL/POP)	.41	.42	.42	.43	.43	.43
AGRICULTURE, FORESTRY + FISHERIES	28,600	24,400	20,400	17,600	15,000	12,500
MINING	1,900	1,700	1,500	1,400	1,200	1,100
MANUFACTURING	140,100	159,900	179,400	201,000	223,600	248,200
FOOD + KINDRED PRODUCTS	14,600	14,900	15,400	15,800	16,600	17,200
TEXTILE MILL PRODUCTS	2,200	1,900	1,600	1,300	1,200	1,000
CHEMICALS + ALLIED PRODUCTS	9,600	10,600	11,600	13,300	15,000	16,700
PAPER + ALLIED PRODUCTS	4,200	5,100	5,600	6,300	7,000	7,700
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	1,500	1,600	1,700	1,900	2,000	2,100
ARMED FORCES	77,500	74,600	74,600	74,600	74,600	74,600
OTHER	1,158,000	1,491,000	1,848,300	2,259,500	2,690,600	3,177,300

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - STAUNTON-WINCHESTER, NORTH ATLANTIC 0120

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	175,019	191,582	212,030	232,352	244,384
TOTAL PERSONAL INCOME(000-$58)	118,769	157,991	286,932	371,779	424,449
PER CAPITA INCOME($58)	679	825	1353	1600	1737
PER CAPITA RELATIVE(US=1.00)	.534	.635	.750	.750	.769
TOTAL EARNINGS(000-$58) *	98,170	134,585	247,787	321,142	358,935
PER WORKER EARNINGS($58)		2122	3151	3722	
PER WORKER RELATIVE(US=1.00)		.697	.819	.817	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	188,607	212,266	233,291
TOTAL EMPLOYMENT	63,417	78,646	86,287
PARTICIPATION RATE(EMPL/POP)	.336	.371	.370
AGRICULTURE,FORESTRY + FISHERIES	18,810	16,730	10,931
MINING	558	427	437
MANUFACTURING	13,496	20,108	25,083
FOOD + KINDRED PRODUCTS	1,389	2,582	4,037
TEXTILE MILL PRODUCTS	3,516	5,130	1,840
CHEMICALS + ALLIED PRODUCTS	2,439	5,555	6,177
PAPER + ALLIED PRODUCTS		74	60
PETROLEUM REFINING			
PRIMARY METALS		127	184
ARMED FORCES	163	95	87
OTHER	30,390	41,286	49,749

WATER RESOURCES PLANNING AREA - STAUNTON-WINCHESTER, NORTH ATLANTIC 0120 TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	268,600	314,100	364,800	417,900	475,700	545,600
TOTAL PERSONAL INCOME(000-$58)	639,793	1,037,559	1,604,173	2,508,249	3,831,123	5,836,918
PER CAPITA INCOME($58)**	2382	3303	4397	6002	8053	10698
PER CAPITA RELATIVE(US=1.00)	.78	.80	.82	.84	.85	.86
TOTAL EARNINGS (000-$58) *	558,165	862,614	1,282,822	1,980,029	2,995,986	4,526,643
PER WORKER EARNINGS($58)**	5237	6787	8831	11746	15551	20667
PER WORKER RELATIVE(US=1.00)	.83	.84	.85	.86	.87	.88

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	268,600	314,100	364,800	417,900	475,700	545,600
TOTAL EMPLOYMENT	106,600	127,100	145,300	168,600	192,700	219,000
PARTICIPATION RATE(EMPL/POP)	.40	.40	.40	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	9,300	8,100	7,000	6,200	5,300	4,500
MINING	D	D	D	D	D	D
MANUFACTURING	32,500	38,200	43,600	49,800	56,300	63,300
FOOD + KINDRED PRODUCTS	4,300	4,500	4,600	4,700	4,800	4,900
TEXTILE MILL PRODUCTS	1,800	1,500	1,300	1,200	1,100	900
CHEMICALS + ALLIED PRODUCTS	8,400	10,100	11,700	14,300	16,700	19,100
PAPER + ALLIED PRODUCTS	D	D	D	D	D	D
PETROLEUM REFINING						
PRIMARY METALS	D	D	D	D	D	D
ARMED FORCES	D	D	D	D	D	D
OTHER	64,400	80,400	94,300	112,200	130,700	150,800

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - ROANOKE-LYNCHBURG, NORTH ATLANTIC 0121

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	425,701	458,914	482,675	522,598	546,446
TOTAL PERSONAL INCOME(000-$58)	302,982	411,510	629,730	831,914	965,276
PER CAPITA INCOME($58)	712	897	1305	1592	1766
PER CAPITA RELATIVE(US=1.00)	.560	.690	.723	.746	.782
TOTAL EARNINGS(000-$58) *	252,713	350,613	530,275	706,219	805,853
PER WORKER EARNINGS($58)		2307	3037	3705	
PER WORKER RELATIVE(US=1.00)		.757	.790	.813	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	451,791	483,213	524,707
TOTAL EMPLOYMENT	151,949	174,614	190,590
PARTICIPATION RATE(EMPL/POP)	.336	.361	.363
AGRICULTURE,FORESTRY + FISHERIES	40,847	28,513	16,209
MINING	1,694	1,285	1,137
MANUFACTURING	33,477	44,645	58,597
FOOD + KINDRED PRODUCTS	2,095	3,060	4,278
TEXTILE MILL PRODUCTS	6,280	9,879	8,835
CHEMICALS + ALLIED PRODUCTS	5,561	4,403	3,597
PAPER + ALLIED PRODUCTS		3,769	3,967
PETROLEUM REFINING		60	57
PRIMARY METALS		2,067	3,057
ARMED FORCES		206	431
OTHER	75,931	99,965	114,216

WATER RESOURCES PLANNING AREA - ROANOKE-LYNCHBURG, NORTH ATLANTIC 0121

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	583,900	645,500	723,900	800,300	889,000	988,200
TOTAL PERSONAL INCOME(000-$58)	1,402,510	2,117,843	3,127,352	4,694,491	7,007,357	10,418,353
PER CAPITA INCOME($58)**	2402	3281	4320	5866	7882	10543
PER CAPITA RELATIVE(US=1.00)	.79	.80	.81	.82	.83	.85
TOTAL EARNINGS (000-$58) *	1,140,187	1,678,674	2,421,700	3,595,851	5,295,276	7,794,905
PER WORKER EARNINGS($58)**	5206	6747	8780	11635	15439	20616
PER WORKER RELATIVE(US=1.00)	.83	.84	.85	.85	.87	.88

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	583,900	645,500	723,900	800,300	889,000	988,200
TOTAL EMPLOYMENT	219,000	248,800	275,800	309,000	343,000	378,100
PARTICIPATION RATE(EMPL/POP)	.38	.39	.38	.39	.39	.38
AGRICULTURE,FORESTRY + FISHERIES	11,900	9,500	7,500	6,100	4,900	3,900
MINING	800	800	700	700	600	600
MANUFACTURING	70,200	79,700	88,300	98,000	108,300	119,300
FOOD + KINDRED PRODUCTS	4,400	4,500	4,600	4,600	4,600	4,600
TEXTILE MILL PRODUCTS	9,000	8,500	8,000	7,600	7,200	6,800
CHEMICALS + ALLIED PRODUCTS	4,600	5,400	6,400	7,700	9,100	10,400
PAPER + ALLIED PRODUCTS	4,000	4,100	4,300	4,600	4,900	5,300
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	3,900	4,600	5,300	6,100	6,800	7,500
ARMED FORCES	400	400	400	400	400	400
OTHER	135,600	158,400	179,000	203,900	228,700	253,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - RICHMOND, NORTH ATLANTIC 0122

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	604,204	638,487	719,633	826,058	869,680
TOTAL PERSONAL INCOME(000-$58)	585,129	772,670	1,144,235	1,526,731	1,790,420
PER CAPITA INCOME($58)	968	1210	1590	1848	2059
PER CAPITA RELATIVE(US=1.00)	.762	.931	.881	.866	.912
TOTAL EARNINGS(000-$58) *	466,299	642,741	958,785	1,255,508	1,452,738
PER WORKER EARNINGS($58)		2769	3371	3985	
PER WORKER RELATIVE(US=1.00)		.909	.876	.875	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	628,574	720,429	829,391
TOTAL EMPLOYMENT	232,132	284,239	315,034
PARTICIPATION RATE(EMPL/POP)	.369	.395	.380
AGRICULTURE,FORESTRY + FISHERIES	52,741	39,093	22,968
MINING	469	589	443
MANUFACTURING	52,852	63,880	76,814
FOOD + KINDRED PRODUCTS	4,179	5,659	7,870
TEXTILE MILL PRODUCTS	2,363	4,727	3,161
CHEMICALS + ALLIED PRODUCTS	6,153	8,413	9,445
PAPER + ALLIED PRODUCTS		4,191	5,938
PETROLEUM REFINING		64	294
PRIMARY METALS		627	3,722
ARMED FORCES		7,202	7,820
OTHER	126,070	173,475	206,989

WATER RESOURCES PLANNING AREA - RICHMOND, NORTH ATLANTIC 0122

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	941,200	1,054,900	1,198,200	1,337,700	1,495,700	1,677,500
TOTAL PERSONAL INCOME(000-$58)	2,617,530	3,964,171	5,861,741	8,773,718	12,984,076	19,127,762
PER CAPITA INCOME($58)**	2781	3758	4892	6559	8681	11403
PER CAPITA RELATIVE(US=1.00)	.91	.91	.92	.92	.92	.92
TOTAL EARNINGS (000-$58) *	2,122,261	3,125,301	4,526,787	6,741,422	9,912,710	14,575,256
PER WORKER EARNINGS($58)**	5845	7498	9663	12687	16653	21963
PER WORKER RELATIVE(US=1.00)	.93	.93	.93	.93	.93	.94

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	941,200	1,054,900	1,198,200	1,337,700	1,495,700	1,677,500
TOTAL EMPLOYMENT	363,100	416,800	468,500	531,400	595,200	663,600
PARTICIPATION RATE(EMPL/POP)	.39	.40	.39	.40	.40	.40
AGRICULTURE,FORESTRY + FISHERIES	17,900	15,000	12,400	10,600	8,900	7,400
MINING	D	D	D	D	D	D
MANUFACTURING	86,500	95,600	104,800	114,400	124,400	135,400
FOOD + KINDRED PRODUCTS	8,100	8,100	8,200	8,000	7,800	7,600
TEXTILE MILL PRODUCTS	3,400	3,300	3,200	3,100	3,000	2,800
CHEMICALS + ALLIED PRODUCTS	11,900	14,200	16,500	20,100	23,500	26,800
PAPER + ALLIED PRODUCTS	7,500	9,100	10,300	11,800	13,400	14,800
PETROLEUM REFINING	D	D	D	D	D	D
PRIMARY METALS	4,000	4,200	4,400	4,600	4,700	4,800
ARMED FORCES	8,600	8,200	8,200	8,200	8,200	8,200
OTHER	249,900	297,600	342,800	397,900	453,500	512,400

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

WATER RESOURCES PLANNING AREA - NORFOLK, NORTH ATLANTIC 0123

TABLE B-4A

POPULATION, PERSONAL INCOME AND EARNINGS, SELECTED YEARS, 1929-62

	1929	1940	1950	1959	1962
POPULATION (JULY 1)	448,851	496,522	747,441	957,834	1,038,340
TOTAL PERSONAL INCOME(000-$58)	435,297	598,114	1,291,891	1,736,798	2,023,401
PER CAPITA INCOME($58)	970	1205	1728	1813	1949
PER CAPITA RELATIVE(US=1.00)	.763	.927	.957	.850	.863
TOTAL EARNINGS(000-$58) *	378,007	522,288	1,119,974	1,491,857	1,720,106
PER WORKER EARNINGS($58)		2728	3575	3977	
PER WORKER RELATIVE(US=1.00)		.896	.930	.873	

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1930-60

	1940	1950	1960
POPULATION (APRIL 1)	488,814	748,270	961,700
TOTAL EMPLOYMENT	191,486	313,298	375,081
PARTICIPATION RATE(EMPL/POP)	.392	.419	.390
AGRICULTURE, FORESTRY + FISHERIES	30,364	22,118	15,012
MINING	107	133	110
MANUFACTURING	40,057	42,059	59,982
FOOD + KINDRED PRODUCTS	5,600	6,391	10,619
TEXTILE MILL PRODUCTS	754	491	331
CHEMICALS + ALLIED PRODUCTS	2,457	2,352	2,665
PAPER + ALLIED PRODUCTS		412	724
PETROLEUM REFINING		128	491
PRIMARY METALS		493	334
ARMED FORCES	17,933	75,341	86,112
OTHER	103,025	173,647	213,865

WATER RESOURCES PLANNING AREA - NORFOLK, NORTH ATLANTIC 0123

TABLE B-4B

POPULATION, PERSONAL INCOME AND EARNINGS, PROJECTED FOR SELECTED YEARS, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,129,600	1,257,900	1,434,700	1,591,100	1,779,600	1,994,300
TOTAL PERSONAL INCOME(000-$58)	3,298,231	4,958,620	7,383,217	11,175,776	16,534,709	24,804,190
PER CAPITA INCOME($58)**	2920	3942	5146	7024	9291	12438
PER CAPITA RELATIVE(US=1.00)	.96	.96	.96	.98	.98	1.00
TOTAL EARNINGS (000-$58) *	2,746,435	3,967,734	5,819,235	8,525,624	12,527,447	18,719,552
PER WORKER EARNINGS($58)**	6149	7867	10300	13436	17649	23662
PER WORKER RELATIVE(US=1.00)	.97	.97	.99	.99	.99	1.01

* INCLUDING ARMED FORCES PAY

EMPLOYMENT BY SELECTED INDUSTRIES, 1970-2020

	1970	1980	1990	2000	2010	2020
POPULATION	1,129,600	1,257,900	1,434,700	1,591,100	1,779,600	1,994,300
TOTAL EMPLOYMENT	446,600	504,300	565,000	634,500	709,800	791,100
PARTICIPATION RATE(EMPL/POP)	.40	.40	.39	.40	.40	.40
AGRICULTURE, FORESTRY + FISHERIES	11,700	9,700	8,000	6,800	5,700	4,700
MINING	D	D	D	D	D	D
MANUFACTURING	65,900	70,800	75,900	81,100	86,700	92,700
FOOD + KINDRED PRODUCTS	10,700	10,600	10,600	10,500	10,500	10,400
TEXTILE MILL PRODUCTS	D	D	D	D	D	D
CHEMICALS + ALLIED PRODUCTS	3,200	3,600	4,000	4,600	5,200	5,700
PAPER + ALLIED PRODUCTS	1,300	1,700	2,200	2,700	3,300	4,000
PETROLEUM REFINING	500	500	400	400	400	300
PRIMARY METALS	400	400	400	500	500	500
ARMED FORCES	100,400	96,700	96,700	96,700	96,700	96,700
OTHER	268,500	327,000	384,300	449,800	520,500	596,900

D TOO SMALL TO BE PROJECTED BUT INCLUDED IN HIGHER LEVEL TOTALS
** COMPUTED FROM UNROUNDED DATA

ADDENDUM 1. DERIVATION OF PERSONAL INCOME ESTIMATES

Personal income is the current income received by residents of an area from all sources. It is measured before deduction of income and other direct personal taxes, but after deduction of individuals' contributions to social security, government retirement, and other social insurance programs. While cash income makes up the overwhelming bulk of the total - more than 95 percent on a national basis - personal income also includes several types of nonmonetary income or income in kind, in order to improve the scope of the estimates and thereby make the basis of comparison by areas more meaningful.

Personal income is the most comprehensive measure available on an area basis. It covers the income received by residents of each area from business establishments, Federal and State and local governments, households and institutions, and foreign countries. All forms of income flowing to persons from these sources are included -- wages and salaries, various types of supplementary earnings termed "other labor income," the net incomes of owners of unincorporated businesses (including farms), net rental income, dividends, interest, and government and business "transfer payments" (consisting in general of disbursements to individuals for which no services are rendered currently, such as unemployment benefits, relief, and veterans' pensions).

Each of these various types of income is measured on an area basis as the summation of separately estimated components. For example, wages and salaries and proprietors' income are estimated by individual industries; transfer payments, by the numerous individual types of disbursements comprising this category. Total personal income for each area is thus built up from an extensive array of component detail. Per capita income is derived by dividing this total by the area's midyear population.

The area estimates of personal income are constructed from a wide variety of statistical information. This consists very largely of compilations by government agencies, although data are drawn from numerous private sources as well.

A large body of economic information on areas is collected by government in the interests of business and other broad user groups. The periodic industrial and population censuses are predominant in this category. Also included is the statistical work of the Department of Agriculture providing for data collection and estimation of farm income on an area basis.

Of vital importance as a statistical source of local area income measures are the data that become available from governmental agencies as a byproduct of their administrative functions. A major example is

the tabulations of wages and salaries in "covered" industries prepared by the various State unemployment insurance commissions from employer reports and then transmitted to Washington for summarization by the Labor Department's Bureau of Employment Security. Another example is afforded by compilations of the Internal Revenue Service of the total amounts of various types of income reported by individuals in various areas on Federal income tax returns. The list of such byproduct data available from government could be lengthened indefinitely -- including, as it does, the diverse records relevant to personal income measurement that are maintained by Federal and State and local agencies for the administration of specific programs or the conduct of general functions.

Data on economic activities in local areas are thus not collected in the framework of a coordinated statistical program designed for income measurement. For the most part, reported statistical information is not directly or wholly suitable for this purpose and must be processed to adjust for differences in definition and to fill gaps in coverage. Geographic income measurement, therefore, becomes a twofold task: Assembling data from a multiplicity of sources and then adapting them, through estimation, in a step-by-step buildup of aggregate income from component flows.

The income estimates used in this study were developed within the framework of the Department's official State estimates of personal income. That is, State totals for each of about 100 income components were allocated to the local areas of the States in accordance with each area's proportionate share of a related economic series available on a local-area basis.

This approach to small-area income estimation accomplishes three main purposes. It permits the utilization of all available sources of information, thereby minimizing errors that stem from the estimation of broad components on the basis of data differing in scope and internal composition. Secondly, it brings into play the potent factor of "offsetting errors." The tendency for errors in underlying components to compensate in the totals is a phenomenon observed repeatedly in the field of income estimation when a detailed, careful statistical procedure is followed. Finally, use of a detailed allocation method yields a large amount of analytically useful information on industrial sources of income at the local-area level.

Closely related to the aspect of industrial detail is that of geographic detail. Estimates of the various income components were made on a county basis to the extent possible. Figures for the separate counties were then grouped into the economic areas used in the study. Although counties formed the basic "building blocks," estimates are now shown for these units.

The absence of county figures stems from two factors. First, for a number of components, the most satisfactory data on which to base

an estimate were available for metropolitan areas or for groups of counties. In such instances extension of geographic detail to the county level was sacrificed in favor of greater accuracy in the overall estimates. In elaboration of this point, it may be noted that whereas certain of the detailed income estimates must be classed as statistically unreliable on a county basis, they appear to rate as tolerably satisfactory when the county figures are grouped into area totals.

Secondly, income estimates for individual counties are not shown because of the lack of requisite data for making adjustments to take account of commuting of workers across county lines. Certain income components (wages and salaries, in particular) are measured at the point of disbursement (place of work), while others (property income, for example) are estimated on a residential basis. Where workers reside in one county and work in another, personal income as estimated for those counties is partly on a "where-received" basis and partly on a "where-earned" concept. Data suitable to convert personal income wholly to either of the two definitions are lacking. Accordingly, the commuter problem is "solved" by grouping counties into geographic areas so that commuting across area lines is at a minimum. This solution precludes the publishing of meaningful estimates for individual counties.

Use of the county as a building block served two purposes: (1) It gave maximum flexibility in the delineation of economic areas to be used in analysis and projection; and (2) it provided the geographic detail necessary to convert the projections from economic areas to water resource planning areas.

Preparation of income estimates for local areas in a complex task. Following is a brief description of sources of data and methods of estimation used.

Private wages and salaries and other labor income. These two components of income are grouped together because they are closely related, and because the payroll estimates are used in measuring the distribution of "other labor income."

The payroll series for the most current year were prepared by allocating State totals to counties by a combination of payrolls obtained from individual State unemployment insurance (UI) agencies and special tabulations from the Bureau of Old-Age and Survivors' Insurance (OASI) covering payrolls of firms excluded from UI coverage because of their size. These payroll estimates were carried back to earlier years by a combination of Census and OASI payroll and employment data.

Wages and salaries in industries not covered by the UI program -- agriculture, forestry, fisheries, railroads, private education, hospitals, religious organizations, private households, and the "rest

of the world" -- were measured mainly on the basis of data collected in the various censuses of population and industry taken since 1929. Extension to years subsequent to 1960 was accomplished by extrapolating the 1960 benchmark forward by the movement of a closely related "covered" industry.

State estimates of most components of other labor income were allocated to counties in accordance with the wage and salary distribution in the most relevant industry. Other items such as military reserve pay, compensation for injuries and directors' fees were allocated by a related series.

Government payrolls. County estimates of Federal civilian pay were based on UI reports supplemented by special tabulations of W-2 income tax returns for selected areas, while military pay rests on special tabulations supplied by the Department of Defense. State and local government payrolls were assembled from data collected in the 1957 and 1962 Censuses of Governments, and from special information obtained directly from State and local governments. Each major component of government was carried back by Census payroll and employment data.

Proprietors' income . Self-employment income was measured separately for the farm and nonfarm portions. Nonfarm income was derived by allocating State totals to counties or other local areas in accordance with three sets of collateral information. First, estimates of proprietors' income in the 100 largest standard metropolitan statistical areas were prepared on the basis of data published by the Internal Revenue Service (IRS) in Statistics of Income . These figures were then deducted from the State totals leaving a much smaller residual among the remaining counties of each State. Estimates for the smaller SMSA's were then developed on the basis of information from the 1960 Census of Population. These, too, were deducted from the State totals. The remainder -- representing less than one-fourth of total nonfarm self-employment income was allocated among the remaining counties of each State in accordance with the number of nonfarm self-employed persons in the county weighted by the average wages of workers in the same county. This process was carried out statistically so as to insure comparability among the various segments of proprietors' income that were based on different source material.

Farm proprietors' income was estimated by preparing county distribution of gross farm income and of production expenses with net farm income obtained as the difference between the two. The county distributions of the two components were obtained by allocating State totals of income and expenses to counties on the basis of various allocators -- some direct, others indirect. Many allocating series were obtained from the appropriate quinquennial censuses of agriculture or from other phases of the U.S. Department of Agriculture's agricultural reporting system. In other instances, indirect measures were necessarily used.

Property income. Monetary rents, dividends, and interest were estimated currently by first preparing estimates of the 100 largest SMSA's from (IRS) data in Statistics of Income. These estimates were deducted from State totals and the remainder of property income distributed among the other counties in accordance with relationships established for the 100 largest SMSA's. Imputed rents and interest were measured indirectly through data reflecting the value of rental property and the amount of noninterest bearing cash deposits in financial institutions.

Transfer payments. County data are generally available for measuring Social Security benefit payments, disbursements under the various veterans' programs, Federal Government retirement payments and unemployment insurance benefits. Allocators for these transfers were derived from administrative data of the organizations responsible for the program. For numerous other components of transfer payments, individual State sources were used; for the remaining items a general and indirect allocator such as population was used.

ADDENDUM 2. EFFECTS OF ALTERNATIVE ASSUMPTIONS ON PROJECTIONS OF GROSS NATIONAL PRODUCT

In the pages following, an ordered set of codes is presented which indicates the assumptions underlying the projections of gross national product. From these one can measure the effect that a change in an assumption has on the projected value.

Each code consists of six digits, corresponding to the six key assumptions used in projecting gross national product. Listed below are the subjects of the six assumptions and the digit position that identifies each.

Assumption subject	Position of digit
Population of working age	1st
Labor force participation rate	2nd
Employment rate (1.00 minus unemployment rate)	3rd
Proportion of employment in the private economy	4th
Hours per man per year in the private economy	5th
Product per man-hour in the private economy	6th

Shown below are the levels of the various assumptions and the corresponding digit values.

Assumption level	Digit Value
High assumption	1
Middle assumption	2
Low assumption	3

As an example, the gross national product that would result in the year 2020 from the assumptions listed below is $5.97 trillion.

High population of working age (1)
Low labor force participation rate (3)
Middle employment rate (2)
High proportion of employment in the private economy (1)
Low hours per man per year in the private economy (3)
High product per man-hour in the private economy (1)

This value of gross national product is found in the table opposite code 132131. (See numbers in parentheses after each assumption.) To find the effect of a change in the assumption regarding the population of working age, other assumptions remaining the same, the projected gross national product for code 132131 could be compared with projections under codes 232131 and 332131.

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
111111	1,247,772	3,142,335	7,913,829
111112	1,214,406	2,944,222	7,128,569
111113	1,181,690	2,757,270	6,421,498
111121	1,218,411	2,953,984	7,117,884
111122	1,185,876	2,768,184	6,413,199
111123	1,153,980	2,592,843	5,778,687
111131	1,177,458	2,733,470	6,321,956
111132	1,146,091	2,562,075	5,697,851
111133	1,115,338	2,400,328	5,135,895
111211	1,236,829	3,060,241	7,546,742
111212	1,203,924	2,868,665	6,802,593
111213	1,171,665	2,687,872	6,132,547
111221	1,207,873	2,878,105	6,792,468
111222	1,175,793	2,698,427	6,124,683
111223	1,144,342	2,528,862	5,523,396
111231	1,167,492	2,664,857	6,038,218
111232	1,136,563	2,499,109	5,446,793
111233	1,106,240	2,342,690	4,914,263
111311	1,225,882	2,978,157	7,179,647
111312	1,193,443	2,793,108	6,476,618
111313	1,161,640	2,618,474	5,843,597
111321	1,197,335	2,802,227	6,467,052
111322	1,165,710	2,628,670	5,836,167
111323	1,134,704	2,464,882	5,268,105
111331	1,157,526	2,596,243	5,754,479
111332	1,127,035	2,436,142	5,195,735
111333	1,097,141	2,285,052	4,692,631
112111	1,241,366	3,126,097	7,872,886
112112	1,208,168	2,929,021	7,091,687
112113	1,175,621	2,743,037	6,388,280
112121	1,212,152	2,938,732	7,081,058
112122	1,179,786	2,753,895	6,380,024
112123	1,148,055	2,579,462	5,748,800
112131	1,171,411	2,719,361	6,289,254
112132	1,140,206	2,548,855	5,668,383
112133	1,109,613	2,387,945	5,109,339
112211	1,230,475	3,044,439	7,507,693
112212	1,197,741	2,853,855	6,767,401
112213	1,165,648	2,673,999	6,100,826
112221	1,201,669	2,863,247	6,757,328
112222	1,169,755	2,684,499	6,093,003
112223	1,138,467	2,515,813	5,494,832
112231	1,161,497	2,651,103	6,006,986
112232	1,130,728	2,486,214	5,418,626
112233	1,100,562	2,330,606	4,888,855
112311	1,219,584	2,962,781	7,142,501
112312	1,187,313	2,778,690	6,443,114
112313	1,155,675	2,604,961	5,813,373

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
112321	1,191,185	2,787,761	6,433,598
112322	1,159,724	2,615,104	5,805,982
112323	1,128,879	2,452,164	5,240,863
112331	1,151,583	2,582,845	5,724,718
112332	1,121,249	2,423,573	5,168,869
112333	1,091,510	2,273,267	4,668,371
113111	1,234,955	3,109,870	7,831,936
113112	1,201,930	2,913,820	7,054,805
113113	1,169,552	2,728,805	6,355,062
113121	1,205,893	2,923,480	7,044,232
113122	1,173,696	2,739,606	6,346,849
113123	1,142,130	2,566,082	5,718,912
113131	1,165,365	2,705,252	6,256,552
113132	1,134,322	2,535,634	5,638,914
113133	1,103,888	2,375,562	5,082,782
113211	1,224,121	3,028,637	7,468,645
113212	1,191,557	2,839,046	6,732,208
113213	1,159,631	2,660,126	6,069,106
113221	1,195,464	2,848,388	6,722,188
113222	1,163,717	2,670,572	6,061,323
113223	1,132,592	2,502,764	5,466,267
113231	1,155,502	2,637,350	5,975,754
113232	1,124,893	2,473,319	5,390,458
113233	1,094,884	2,318,522	4,863,446
113311	1,213,286	2,947,404	7,105,355
113312	1,181,184	2,764,272	6,409,611
113313	1,149,710	2,591,448	5,783,149
113321	1,185,036	2,773,296	6,400,144
113322	1,153,738	2,601,538	5,775,797
113323	1,123,053	2,439,447	5,213,622
113331	1,145,639	2,569,447	5,694,956
113332	1,115,464	2,411,005	5,142,002
113333	1,085,880	2,261,481	4,644,111
121111	1,228,609	3,062,315	7,712,965
121112	1,195,755	2,869,273	6,947,655
121113	1,163,546	2,687,097	6,258,555
121121	1,199,698	2,878,785	6,937,242
121122	1,167,667	2,697,732	6,250,468
121123	1,136,265	2,526,870	5,632,082
121131	1,159,379	2,663,905	6,161,544
121132	1,128,498	2,496,889	5,553,301
121133	1,098,222	2,339,274	5,005,628
121211	1,217,831	2,982,328	7,355,200
121212	1,185,436	2,795,646	6,629,965
121213	1,153,676	2,619,472	5,976,949
121221	1,189,323	2,804,845	6,620,097
121222	1,157,740	2,629,757	5,969,284
121223	1,126,776	2,464,524	5,383,280

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
121231	1,149,568	2,597,045	5,885,017
121232	1,119,118	2,435,531	5,308,624
121233	1,089,264	2,283,109	4,789,629
121311	1,207,053	2,902,342	6,997,435
121312	1,175,116	2,722,020	6,312,274
121313	1,143,806	2,551,847	5,695,342
121321	1,178,949	2,730,905	6,302,952
121322	1,147,813	2,561,782	5,688,101
121323	1,117,288	2,402,178	5,134,477
121331	1,139,756	2,530,184	5,608,490
121332	1,109,737	2,374,173	5,063,947
121333	1,080,307	2,226,943	4,573,629
122111	1,222,297	3,046,502	7,673,055
122112	1,189,614	2,854,460	6,911,711
122113	1,157,571	2,673,228	6,226,182
122121	1,193,536	2,863,923	6,901,352
122122	1,161,671	2,683,808	6,218,136
122123	1,130,432	2,513,832	5,602,954
122131	1,153,426	2,650,157	6,129,673
122132	1,122,705	2,484,006	5,524,582
122133	1,092,586	2,327,207	4,979,746
122211	1,211,575	2,966,930	7,317,144
122212	1,179,348	2,781,215	6,595,667
122213	1,147,752	2,605,954	5,946,034
122221	1,183,215	2,790,366	6,585,850
122222	1,151,796	2,616,186	5,938,409
122223	1,120,992	2,451,809	5,355,441
122231	1,143,666	2,583,642	5,854,578
122232	1,113,373	2,422,966	5,281,172
122233	1,083,674	2,271,333	4,764,866
122311	1,200,853	2,887,358	6,961,233
122312	1,169,082	2,707,970	6,279,622
122313	1,137,934	2,538,679	5,665,886
122321	1,172,894	2,716,809	6,270,348
122322	1,141,920	2,548,563	5,658,683
122323	1,111,553	2,389,786	5,107,928
122331	1,133,905	2,517,128	5,579,484
122332	1,104,041	2,361,925	5,037,763
122333	1,074,763	2,215,459	4,549,986
123111	1,215,985	3,030,689	7,633,146
123112	1,183,472	2,839,648	6,875,767
123113	1,151,596	2,659,359	6,193,808
123121	1,187,374	2,849,061	6,865,462
123122	1,155,675	2,669,885	6,185,804
123123	1,124,599	2,500,793	5,573,827
123131	1,147,473	2,636,408	6,097,801
123132	1,116,912	2,471,123	5,495,862
123133	1,086,949	2,315,141	4,953,864

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
123211	1,205,319	2,951,531	7,279,089
123212	1,173,260	2,766,784	6,561,369
123213	1,141,829	2,592,435	5,915,120
123221	1,177,107	2,775,888	6,551,603
123222	1,145,851	2,602,614	5,907,535
123223	1,115,208	2,439,093	5,327,602
123231	1,137,763	2,570,240	5,824,140
123232	1,107,629	2,410,400	5,253,720
123233	1,078,085	2,259,558	4,740,103
123311	1,194,653	2,872,374	6,925,031
123312	1,163,047	2,693,920	6,246,970
123313	1,132,061	2,525,511	5,636,431
123321	1,166,840	2,702,714	6,237,745
123322	1,136,027	2,535,343	5,629,265
123323	1,105,818	2,377,393	5,081,378
123331	1,128,054	2,504,073	5,550,479
123332	1,098,345	2,349,678	5,011,579
123333	1,069,220	2,203,974	4,526,342
131111	1,204,811	2,982,305	7,512,093
131112	1,172,599	2,794,324	6,766,742
131113	1,141,019	2,616,924	6,095,613
131121	1,176,465	2,803,587	6,756,601
131122	1,145,060	2,627,281	6,087,736
131123	1,114,271	2,460,898	5,485,477
131131	1,136,934	2,594,340	6,001,131
131132	1,106,656	2,431,703	5,408,751
131133	1,076,971	2,278,220	4,875,360
131211	1,194,244	2,904,415	7,163,659
131212	1,162,482	2,722,628	6,457,337
131213	1,131,342	2,551,072	5,821,350
131221	1,166,293	2,731,585	6,447,726
131222	1,135,327	2,561,088	5,813,886
131223	1,104,968	2,400,187	5,243,163
131231	1,127,314	2,529,233	5,731,816
131232	1,097,459	2,371,953	5,170,454
131233	1,068,189	2,223,527	4,664,994
131311	1,183,676	2,826,526	6,815,224
131312	1,152,364	2,650,931	6,147,931
131313	1,121,665	2,485,220	5,547,087
131321	1,156,121	2,659,584	6,138,852
131322	1,125,594	2,494,895	5,540,035
131323	1,095,665	2,339,475	5,000,849
131331	1,117,695	2,464,125	5,462,500
131332	1,088,262	2,312,204	4,932,158
131333	1,059,406	2,168,834	4,454,628
132111	1,198,623	2,966,907	7,473,225
132112	1,166,578	2,779,900	6,731,735
132113	1,135,161	2,603,419	6,064,084

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
132121	1,170,423	2,789,115	6,721,647
132122	1,139,181	2,613,722	6,056,247
132123	1,108,552	2,448,201	5,457,109
132131	1,131,097	2,580,952	5,970,091
132132	1,100,976	2,419,157	5,380,780
132133	1,071,445	2,266,470	4,850,153
132211	1,188,110	2,889,421	7,126,595
132212	1,156,512	2,708,575	6,423,933
132213	1,125,534	2,537,908	5,791,242
132221	1,160,304	2,717,486	6,414,372
132222	1,129,498	2,547,872	5,783,816
132223	1,099,297	2,387,804	5,216,051
132231	1,121,527	2,516,182	5,702,171
132232	1,091,827	2,359,717	5,143,718
132233	1,062,708	2,212,060	4,640,877
132311	1,177,597	2,811,935	6,779,966
132312	1,146,447	2,637,250	6,116,131
132313	1,115,908	2,472,397	5,518,400
132321	1,150,185	2,645,858	6,107,098
132322	1,119,816	2,482,022	5,511,385
132323	1,090,042	2,327,408	4,974,992
132331	1,111,957	2,451,411	5,434,251
132332	1,082,677	2,300,277	4,906,657
132333	1,053,971	2,157,651	4,431,601
133111	1,192,434	2,951,508	7,434,356
133112	1,160,556	2,765,475	6,696,728
133113	1,129,303	2,589,914	6,032,554
133121	1,164,381	2,774,642	6,686,692
133122	1,133,302	2,600,163	6,024,759
133123	1,102,833	2,435,505	5,428,741
133131	1,125,261	2,567,564	5,939,051
133132	1,095,296	2,406,612	5,352,810
133133	1,065,919	2,254,719	4,824,946
133211	1,181,976	2,874,426	7,089,532
133212	1,150,543	2,694,522	6,390,529
133213	1,119,726	2,524,744	5,761,133
133221	1,154,315	2,703,387	6,381,019
133222	1,123,670	2,534,656	5,753,746
133223	1,093,626	2,375,422	5,188,938
133231	1,115,740	2,503,131	5,672,527
133232	1,086,194	2,347,482	5,116,983
133233	1,057,227	2,200,593	4,616,760
133311	1,171,518	2,797,343	6,744,708
133312	1,140,530	2,623,568	6,084,330
133313	1,110,150	2,459,575	5,489,713
133321	1,144,249	2,632,131	6,075,345
133322	1,114,038	2,469,149	5,482,734
133323	1,084,419	2,315,340	4,949,135

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
133331	1,106,220	2,438,698	5,406,002
133332	1,077,092	2,288,351	4,881,156
133333	1,048,536	2,146,467	4,408,574
211111	1,247,777	2,978,177	7,006,663
211112	1,214,406	2,790,457	6,311,530
211113	1,181,690	2,613,303	5,685,619
211121	1,218,411	2,799,707	6,302,072
211122	1,185,876	2,623,646	5,678,273
211123	1,153,980	2,457,494	5,116,592
211131	1,177,458	2,590,751	5,597,503
211132	1,146,091	2,428,340	5,045,035
211133	1,115,338	2,275,070	4,547,581
211211	1,236,829	2,900,396	6,681,704
211212	1,203,924	2,718,860	6,022,971
211213	1,171,665	2,547,543	5,429,835
211221	1,207,873	2,727,806	6,014,009
211222	1,175,793	2,557,545	5,422,873
211223	1,144,342	2,396,867	4,890,604
211231	1,167,492	2,525,734	5,346,333
211232	1,136,563	2,368,673	4,822,794
211233	1,106,240	2,220,453	4,351,389
211311	1,225,882	2,822,614	6,356,746
211312	1,193,443	2,647,263	5,734,412
211313	1,161,640	2,481,783	5,174,051
211321	1,197,335	2,655,904	5,725,945
211322	1,165,710	2,491,444	5,167,474
211323	1,134,704	2,336,240	4,664,616
211331	1,157,526	2,460,717	5,095,163
211332	1,127,035	2,309,007	4,600,553
211333	1,097,141	2,165,836	4,155,196
212111	1,241,366	2,962,800	6,970,413
212112	1,208,168	2,776,053	6,278,882
212113	1,175,621	2,599,817	5,656,214
212121	1,212,152	2,785,255	6,269,473
212122	1,179,786	2,610,106	5,648,906
212123	1,148,055	2,444,815	5,090,135
212131	1,171,411	2,577,382	5,568,554
212132	1,140,206	2,415,812	5,018,949
212133	1,109,613	2,263,336	4,524,073
212211	1,230,475	2,885,422	6,647,138
212212	1,197,741	2,704,827	5,991,818
212213	1,165,648	2,534,397	5,401,755
212221	1,201,669	2,713,726	5,982,902
212222	1,169,755	2,544,347	5,394,830
212223	1,138,467	2,384,502	4,865,318
212231	1,161,497	2,512,701	5,318,686
212232	1,130,728	2,356,454	4,797,859
212233	1,100,562	2,209,002	4,328,897

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
212311	1,219,584	2,808,043	6,323,863
212312	1,187,313	2,633,601	5,704,754
212313	1,155,675	2,468,978	5,147,296
212321	1,191,185	2,642,197	5,696,331
212322	1,159,724	2,478,589	5,140,753
212323	1,128,879	2,324,189	4,640,501
212331	1,151,583	2,448,021	5,068,817
212332	1,121,249	2,297,097	4,576,770
212333	1,091,510	2,154,668	4,133,721
213111	1,234,955	2,947,423	6,934,163
213112	1,201,930	2,761,649	6,246,234
213113	1,169,552	2,586,331	5,626,809
213121	1,205,893	2,770,803	6,236,874
213122	1,173,696	2,596,566	5,619,539
213123	1,142,130	2,432,136	5,063,678
213131	1,165,365	2,564,012	5,539,606
213132	1,134,322	2,403,284	4,992,863
213133	1,103,888	2,251,602	4,500,564
213211	1,224,121	2,870,448	6,612,572
213212	1,191,557	2,690,794	5,960,665
213213	1,159,631	2,521,252	5,373,675
213221	1,195,464	2,699,646	5,951,795
213222	1,163,717	2,531,150	5,366,786
213223	1,132,592	2,372,137	4,840,032
213231	1,155,502	2,499,669	5,291,039
213232	1,124,893	2,344,235	4,772,925
213233	1,094,884	2,197,551	4,306,405
213311	1,213,286	2,793,472	6,290,981
213312	1,181,184	2,619,939	5,675,096
213313	1,149,710	2,456,173	5,120,542
213321	1,185,036	2,628,490	5,666,717
213322	1,153,738	2,465,734	5,114,033
213323	1,123,053	2,312,138	4,616,386
213331	1,145,639	2,435,325	5,042,471
213332	1,115,464	2,285,187	4,552,987
213333	1,085,880	2,143,500	4,112,245
221111	1,228,609	2,902,285	6,828,547
221112	1,195,755	2,719,365	6,151,111
221113	1,163,546	2,546,742	5,541,135
221121	1,199,698	2,728,379	6,141,894
221122	1,167,667	2,556,820	5,533,976
221123	1,136,265	2,394,917	4,986,594
221131	1,159,379	2,524,766	5,455,262
221132	1,128,498	2,366,508	4,916,859
221133	1,098,222	2,217,158	4,432,071
221211	1,217,831	2,826,492	6,511,861
221212	1,185,436	2,649,599	5,869,899
221213	1,153,676	2,482,663	5,291,863

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
221221	1,189,323	2,658,316	5,861,164
221222	1,157,740	2,492,409	5,285,079
221223	1,126,776	2,335,840	4,766,360
221231	1,149,568	2,461,412	5,210,487
221232	1,119,118	2,308,367	4,700,276
221233	1,089,264	2,163,937	4,240,873
221311	1,207,053	2,750,700	6,195,176
221312	1,175,116	2,579,833	5,588,686
221313	1,143,806	2,418,584	5,042,591
221321	1,178,949	2,588,253	5,580,434
221322	1,147,813	2,427,998	5,036,181
221323	1,117,288	2,276,764	4,546,125
221331	1,139,756	2,398,057	4,965,711
221332	1,109,737	2,250,227	4,483,693
221333	1,080,307	2,110,717	4,049,675
222111	1,222,297	2,887,301	6,793,220
222112	1,189,614	2,705,329	6,119,294
222113	1,157,571	2,533,600	5,512,479
222121	1,193,536	2,714,296	6,110,125
222122	1,161,671	2,543,626	5,505,357
222123	1,130,432	2,382,562	4,960,811
222131	1,153,426	2,511,739	5,427,051
222132	1,122,705	2,354,300	4,891,437
222133	1,092,586	2,205,724	4,409,161
222211	1,211,575	2,811,901	6,478,175
222212	1,179,348	2,635,925	5,839,539
222213	1,147,752	2,469,854	5,264,498
222221	1,183,215	2,644,596	5,830,849
222222	1,151,794	2,479,538	5,257,745
222223	1,120,992	2,323,792	4,741,718
222231	1,143,666	2,448,712	5,183,543
222232	1,113,373	2,296,461	4,675,977
222233	1,083,674	2,152,779	4,218,954
222311	1,200,853	2,736,502	6,163,130
222312	1,169,082	2,566,520	5,559,783
222313	1,137,934	2,406,107	5,016,517
222321	1,172,894	2,574,896	5,551,574
222322	1,141,920	2,415,472	5,010,141
222323	1,111,553	2,265,021	4,522,624
222331	1,133,905	2,385,686	4,940,036
222332	1,104,041	2,238,621	4,460,516
222333	1,074,763	2,099,835	4,028,747
223111	1,215,985	2,872,317	6,757,893
223112	1,183,472	2,691,293	6,087,477
223113	1,151,596	2,520,459	5,483,822
223121	1,187,374	2,700,214	6,078,356
223122	1,155,675	2,530,432	5,476,737
223123	1,124,599	2,370,207	4,935,028

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
223131	1,147,473	2,498,711	5,398,839
223132	1,116,912	2,342,093	4,866,015
223133	1,086,949	2,194,290	4,386,251
223211	1,205,319	2,797,310	6,444,489
223212	1,173,260	2,622,250	5,809,179
223213	1,141,829	2,457,044	5,237,133
223221	1,177,107	2,630,877	5,800,535
223222	1,145,851	2,466,689	5,230,419
223223	1,115,208	2,311,743	4,717,076
223231	1,137,763	2,436,013	5,156,600
223232	1,107,629	2,284,555	4,651,677
223233	1,078,085	2,141,621	4,197,034
223311	1,194,653	2,722,303	6,131,085
223312	1,163,047	2,553,207	5,530,880
223313	1,132,061	2,393,629	4,990,444
223321	1,166,840	2,561,540	5,522,714
223322	1,136,027	2,402,946	4,984,101
223323	1,105,818	2,253,278	4,499,123
223331	1,128,054	2,373,315	4,914,361
223332	1,098,345	2,227,016	4,437,338
223333	1,069,220	2,088,952	4,007,818
231111	1,204,811	2,826,392	6,650,431
231112	1,172,599	2,648,273	5,990,692
231113	1,141,019	2,480,180	5,396,651
231121	1,176,465	2,657,050	5,981,716
231122	1,145,060	2,489,994	5,389,679
231123	1,114,271	2,332,340	4,856,597
231131	1,136,934	2,458,781	5,313,022
231132	1,106,656	2,304,676	4,788,684
231133	1,076,971	2,159,245	4,316,560
231211	1,194,244	2,752,589	6,342,018
231212	1,162,482	2,580,338	5,716,826
231213	1,131,342	2,417,783	5,153,891
231221	1,166,293	2,588,826	5,708,320
231222	1,135,327	2,427,273	5,147,284
231223	1,104,968	2,274,813	4,642,116
231231	1,127,314	2,397,089	5,074,641
231232	1,097,459	2,248,061	4,577,759
231233	1,068,189	2,107,422	4,130,357
231311	1,183,676	2,678,786	6,033,606
231312	1,152,364	2,512,403	5,442,960
231313	1,121,665	2,355,386	4,911,131
231321	1,156,121	2,520,602	5,434,923
231322	1,125,594	2,364,553	4,904,889
231323	1,095,665	2,217,287	4,427,635
231331	1,117,695	2,335,397	4,836,260
231332	1,088,262	2,191,446	4,366,834
231333	1,059,406	2,055,598	3,944,154

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
232111	1,198,623	2,811,802	6,616,026
232112	1,166,578	2,634,606	5,959,707
232113	1,135,161	2,467,383	5,368,743
232121	1,170,423	2,643,337	5,950,777
232122	1,139,181	2,477,146	5,361,807
232123	1,108,552	2,320,309	4,831,488
232131	1,131,097	2,446,096	5,285,547
232132	1,100,976	2,292,789	4,763,926
232133	1,071,445	2,148,112	4,294,248
232211	1,188,110	2,738,381	6,309,212
232212	1,156,512	2,567,023	5,687,259
232213	1,125,534	2,405,310	5,127,241
232221	1,160,304	2,575,467	5,678,797
232222	1,129,498	2,414,751	5,120,668
232223	1,099,297	2,263,081	4,618,118
232231	1,121,527	2,384,723	5,048,401
232232	1,091,827	2,236,467	4,554,094
232233	1,062,708	2,096,557	4,109,010
232311	1,177,597	2,664,960	6,002,397
232312	1,146,447	2,499,440	5,414,812
232313	1,115,908	2,343,236	4,885,739
232321	1,150,185	2,507,596	5,406,817
232322	1,119,816	2,352,355	4,879,529
232323	1,090,042	2,205,853	4,404,748
232331	1,111,957	2,323,351	4,811,255
232332	1,082,677	2,180,146	4,344,262
232333	1,053,971	2,045,002	3,923,772
233111	1,192,434	2,797,211	6,581,622
233112	1,160,556	2,620,938	5,928,721
233113	1,129,303	2,454,587	5,340,835
233121	1,164,381	2,629,624	5,919,837
233122	1,133,302	2,464,299	5,333,936
233123	1,102,833	2,308,279	4,806,378
233131	1,125,261	2,433,410	5,258,073
233132	1,095,296	2,280,902	4,739,168
233133	1,065,919	2,136,978	4,271,937
233211	1,181,976	2,724,173	6,276,406
233212	1,150,543	2,553,707	5,657,692
233213	1,119,726	2,392,836	5,100,591
233221	1,154,315	2,562,107	5,649,274
233222	1,123,670	2,402,228	5,094,052
233223	1,093,626	2,251,348	4,594,120
233231	1,115,740	2,372,357	5,022,162
233232	1,086,194	2,224,874	4,530,429
233233	1,057,227	2,085,691	4,087,663
233311	1,171,518	2,651,134	5,971,189
233312	1,140,530	2,486,476	5,386,664
233313	1,110,150	2,331,086	4,860,346

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
233321	1,144,249	2,494,590	5,378,711
233322	1,114,038	2,340,158	4,854,169
233323	1,084,419	2,194,418	4,381,861
233331	1,106,220	2,311,304	4,786,251
233332	1,077,092	2,168,845	4,321,690
233333	1,048,536	2,034,405	3,903,390
311111	1,247,777	2,822,250	6,220,777
311112	1,214,406	2,644,393	5,603,728
311113	1,181,690	2,476,547	5,048,126
311121	1,218,411	2,653,157	5,595,333
311122	1,185,876	2,486,346	5,041,605
311123	1,153,980	2,328,924	4,543,017
311131	1,177,458	2,455,180	4,969,908
311132	1,146,091	2,301,301	4,479,498
311133	1,115,338	2,156,084	4,037,924
311211	1,236,829	2,748,555	5,932,321
311212	1,203,924	2,576,558	5,347,583
311213	1,171,665	2,414,241	4,821,074
311221	1,207,873	2,585,033	5,339,627
311222	1,175,793	2,423,718	4,814,894
311223	1,144,342	2,271,482	4,342,414
311231	1,167,492	2,393,578	4,746,951
311232	1,136,563	2,244,769	4,282,221
311233	1,106,240	2,104,337	3,863,769
311311	1,225,882	2,674,860	5,643,865
311312	1,193,443	2,508,722	5,091,438
311313	1,161,640	2,351,936	4,594,022
311321	1,197,335	2,516,909	5,083,921
311322	1,165,710	2,361,089	4,588,184
311323	1,134,704	2,214,040	4,141,812
311331	1,157,526	2,331,977	4,523,995
311332	1,127,035	2,188,238	4,084,945
311333	1,097,141	2,052,589	3,689,615
312111	1,241,366	2,807,681	6,188,599
312112	1,208,168	2,630,745	5,574,747
312113	1,175,621	2,463,769	5,022,024
312121	1,212,152	2,639,464	5,566,395
312122	1,179,786	2,473,517	5,015,536
312123	1,148,055	2,316,911	4,519,532
312131	1,171,411	2,442,512	4,944,211
312132	1,140,206	2,289,431	4,456,342
312133	1,109,613	2,144,967	4,017,056
312211	1,230,475	2,734,368	5,901,637
312212	1,197,741	2,563,262	5,319,929
312213	1,165,648	2,401,786	4,796,148
312221	1,201,669	2,571,693	5,312,015
312222	1,169,755	2,411,214	4,790,001
312223	1,138,467	2,259,767	4,319,969

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
312231	1,161,497	2,381,230	4,722,410
312232	1,130,728	2,233,193	4,260,088
312233	1,100,562	2,093,488	3,843,804
312311	1,219,584	2,661,055	5,614,676
312312	1,187,313	2,495,778	5,065,111
312313	1,155,675	2,339,804	4,570,273
312321	1,191,185	2,503,922	5,057,634
312322	1,159,724	2,348,910	4,564,465
312323	1,128,879	2,202,623	4,120,406
312331	1,151,583	2,319,948	4,500,609
312332	1,121,249	2,176,954	4,063,833
312333	1,091,510	2,042,008	3,670,552
313111	1,234,955	2,793,112	6,156,421
313112	1,201,930	2,617,098	5,545,767
313113	1,169,552	2,450,991	4,995,922
313121	1,205,893	2,625,771	5,537,458
313122	1,173,696	2,460,689	4,989,468
313123	1,142,130	2,304,898	4,496,047
313131	1,165,365	2,429,845	4,918,514
313132	1,134,322	2,277,562	4,433,186
313133	1,103,888	2,133,849	3,996,188
313211	1,224,121	2,720,181	5,870,954
313212	1,191,557	2,549,966	5,292,276
313213	1,159,631	2,389,331	4,771,223
313221	1,195,464	2,558,353	5,284,402
313222	1,163,717	2,398,709	4,765,107
313223	1,132,592	2,248,052	4,297,523
313231	1,155,502	2,368,882	4,697,868
313232	1,124,893	2,221,616	4,237,954
313233	1,094,884	2,082,638	3,823,838
313311	1,213,286	2,647,250	5,585,487
313312	1,181,184	2,482,833	5,038,785
313313	1,149,710	2,327,672	4,546,523
313321	1,185,036	2,490,935	5,031,346
313322	1,153,738	2,336,730	4,540,746
313323	1,123,053	2,191,205	4,098,999
313331	1,145,639	2,307,919	4,477,223
313332	1,115,464	2,165,670	4,042,722
313333	1,085,880	2,031,427	3,651,489
321111	1,228,609	2,750,269	6,062,373
321112	1,195,755	2,576,965	5,461,064
321113	1,163,546	2,413,415	4,919,632
321121	1,199,698	2,585,504	5,452,882
321122	1,167,667	2,422,964	4,913,278
321123	1,136,265	2,269,572	4,427,407
321131	1,159,379	2,392,595	4,843,409
321132	1,128,498	2,242,656	4,365,508
321133	1,098,222	2,101,157	3,935,197

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
321211	1,217,831	2,678,460	5,781,275
321212	1,185,436	2,510,866	5,211,452
321213	1,153,676	2,352,705	4,698,372
321221	1,189,323	2,519,124	5,203,699
321222	1,157,740	2,361,939	4,692,350
321223	1,126,776	2,213,600	4,231,921
321231	1,149,568	2,332,571	4,626,140
321232	1,119,118	2,187,572	4,173,264
321233	1,089,264	2,050,734	3,765,485
321311	1,207,053	2,606,652	5,500,176
321312	1,175,116	2,444,767	4,961,840
321313	1,143,806	2,291,995	4,477,111
321321	1,178,949	2,452,745	4,954,515
321322	1,147,813	2,300,914	4,471,422
321323	1,117,288	2,157,629	4,036,435
321331	1,139,756	2,272,546	4,408,871
321332	1,109,737	2,132,487	3,981,019
321333	1,080,307	2,000,311	3,595,773
322111	1,222,297	2,736,072	6,031,016
322112	1,189,614	2,563,666	5,432,822
322113	1,157,571	2,400,965	4,894,196
322121	1,193,536	2,572,162	5,424,683
322122	1,161,671	2,410,463	4,887,874
322123	1,130,432	2,257,866	4,404,521
322131	1,153,426	2,380,252	4,818,368
322132	1,122,705	2,231,090	4,342,943
322133	1,092,586	2,090,324	3,914,861
322211	1,211,575	2,664,636	5,751,374
322212	1,179,348	2,497,910	5,184,503
322213	1,147,752	2,340,569	4,674,082
322221	1,183,215	2,506,126	5,176,791
322222	1,151,796	2,349,755	4,668,091
322223	1,120,992	2,202,185	4,210,048
322231	1,143,666	2,320,539	4,602,224
322232	1,113,373	2,176,291	4,151,694
322233	1,083,674	2,040,162	3,746,029
322311	1,200,853	2,593,200	5,471,732
322312	1,169,082	2,432,154	4,936,185
322313	1,137,934	2,280,173	4,453,968
322321	1,172,894	2,440,090	4,928,898
322322	1,141,920	2,289,046	4,448,308
322323	1,111,553	2,146,504	4,015,575
322331	1,133,905	2,260,826	4,386,081
322332	1,104,041	2,121,492	3,960,446
322333	1,074,763	1,990,001	3,577,196
323111	1,215,985	2,721,876	5,999,659
323112	1,183,472	2,550,368	5,404,580
323113	1,151,596	2,388,514	4,868,760

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
323121	1,187,374	2,558,820	5,396,484
323122	1,155,675	2,397,963	4,862,471
323123	1,124,599	2,246,161	4,381,635
323131	1,147,473	2,367,910	4,793,327
323132	1,116,912	2,219,524	4,320,378
323133	1,086,949	2,079,491	3,894,526
323211	1,205,319	2,650,812	5,721,473
323212	1,173,260	2,484,955	5,157,555
323213	1,141,829	2,328,433	4,649,792
323221	1,177,107	2,493,128	5,149,882
323222	1,145,851	2,337,571	4,643,832
323223	1,115,208	2,190,770	4,188,175
323231	1,137,763	2,308,507	4,578,309
323232	1,107,629	2,165,011	4,130,125
323233	1,078,085	2,029,591	3,726,572
323311	1,194,653	2,579,748	5,443,288
323312	1,163,047	2,419,541	4,910,530
323313	1,132,061	2,268,352	4,430,824
323321	1,166,840	2,427,436	4,903,281
323322	1,136,027	2,277,178	4,425,194
323323	1,105,818	2,135,378	3,994,715
323331	1,128,054	2,249,105	4,363,291
323332	1,098,345	2,110,497	3,939,873
323333	1,069,220	1,979,691	3,558,619
331111	1,204,811	2,678,287	5,903,970
331112	1,172,599	2,509,536	5,318,399
331113	1,141,019	2,350,284	4,791,139
331121	1,176,465	2,517,852	5,310,432
331122	1,145,060	2,359,581	4,784,951
331123	1,114,271	2,210,219	4,311,797
331131	1,136,934	2,330,011	4,716,911
331132	1,106,656	2,184,011	4,251,519
331133	1,076,971	2,046,229	3,832,470
331211	1,194,244	2,608,366	5,630,229
331212	1,162,482	2,445,174	5,075,320
331213	1,131,342	2,291,169	4,575,670
331221	1,166,293	2,453,216	5,067,770
331222	1,135,327	2,300,160	4,569,805
331223	1,104,968	2,155,719	4,121,428
331231	1,127,314	2,271,563	4,505,328
331232	1,097,459	2,130,374	4,064,306
331233	1,068,189	1,997,131	3,667,200
331311	1,183,676	2,538,444	5,356,488
331312	1,152,364	2,380,812	4,832,242
331313	1,121,665	2,232,053	4,360,200
331321	1,156,121	2,388,580	4,825,109
331322	1,125,594	2,240,738	4,354,660
331323	1,095,665	2,101,218	3,931,059

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
331331	1,117,695	2,213,116	4,293,746
331332	1,088,262	2,076,736	3,877,093
331333	1,059,406	1,948,033	3,501,930
332111	1,198,623	2,664,464	5,873,434
332112	1,166,578	2,496,588	5,290,896
332113	1,135,161	2,338,160	4,766,369
332121	1,170,423	2,504,860	5,282,970
332122	1,139,181	2,347,410	4,760,212
332123	1,108,552	2,198,822	4,289,510
332131	1,131,097	2,317,992	4,692,525
332132	1,100,976	2,172,749	4,229,544
332133	1,071,445	2,035,681	3,812,667
332211	1,188,110	2,594,905	5,601,111
332212	1,156,512	2,432,559	5,049,077
332213	1,125,534	2,279,351	4,552,016
332221	1,160,304	2,440,559	5,041,566
332222	1,129,498	2,288,296	4,546,182
332223	1,099,297	2,144,603	4,100,127
332231	1,121,527	2,259,848	4,482,039
332232	1,091,827	2,119,389	4,043,301
332233	1,062,708	1,986,837	3,648,253
332311	1,177,597	2,525,346	5,328,788
332312	1,146,447	2,368,531	4,807,258
332313	1,115,908	2,220,542	4,337,663
332321	1,150,185	2,376,258	4,800,162
332322	1,119,816	2,229,182	4,332,151
332323	1,090,042	2,090,385	3,910,744
332331	1,111,957	2,201,703	4,271,553
332332	1,082,677	2,066,030	3,857,058
332333	1,053,971	1,937,994	3,483,839
333111	1,192,434	2,650,641	5,842,897
333112	1,160,556	2,483,639	5,263,394
333113	1,129,303	2,326,037	4,741,598
333121	1,164,381	2,491,868	5,255,509
333122	1,133,302	2,335,238	4,735,474
333123	1,102,833	2,187,424	4,267,224
333131	1,125,261	2,305,974	4,668,139
333132	1,095,296	2,161,487	4,207,570
333133	1,065,919	2,025,133	3,792,864
333211	1,181,976	2,581,444	5,571,993
333212	1,150,543	2,419,944	5,022,834
333213	1,119,726	2,267,534	4,528,361
333221	1,154,315	2,427,902	5,015,362
333222	1,123,670	2,276,432	4,522,558
333223	1,093,626	2,133,488	4,078,827
333231	1,115,740	2,248,132	4,458,749
333232	1,086,194	2,108,405	4,022,297
333233	1,057,227	1,976,543	3,629,306

TABLE B-5

EFFECT OF ALTERNATIVE ASSUMPTIONS ON GROSS NATIONAL PRODUCT

GROSS NATIONAL PRODUCT IN MILLIONS OF 1958 DOLLARS

CODE	1980	2000	2020
333311	1,171,518	2,512,247	5,301,088
333312	1,140,530	2,356,249	4,782,275
333313	1,110,150	2,209,031	4,315,125
333321	1,144,249	2,363,936	4,775,216
333322	1,114,038	2,217,626	4,309,642
333323	1,084,419	2,079,552	3,890,430
333331	1,106,220	2,190,290	4,249,359
333332	1,077,092	2,055,324	3,837,024
333333	1,048,534	1,927,958	3,465,714

PART II. DISAGGREGATION INTO NAR HYDROLOGIC AREAS

INTRODUCTION

Part I of this Appendix was prepared by the Office of Business Economics (OBE) of the United States Department of Commerce and was distributed in May, 1968. It includes historical data and economic and demographic projections for 23 NAR Water Resources Planning Areas (WRPA's) for benchmark years to 2020. (A list of counties and independent cities in each WRPA is given on pages B-95 to B-101 of Part I, and a map is also provided (Figure B-3). The WRPA's were adapted by the OBE from the economic areas that are the basis of the OBE's projection methodology. The OBE economic areas form integrated economic units with comparative stability in inter-industry relationships. A map of these areas (Figure B-I), which can be used in conjunction with the map of WRPA's in order to assess the nature of the adaptations required, follows p. B-195.

This part of Appendix B has been prepared by the NAR Study Group. Tables in this part contain the same economic and demographic data and projection series found in Part I, but the data and projections are disaggregated and reaggregated to fit the hydrologic areas used for NAR planning. The tables were distributed during the period from December 1968 to March 1969 for use in NAR planning. This brief introduction to Part II explains the nature of the disaggregations used; detailed descriptions of the methods used for the disaggregation of each data and projection series are on file at the NAR Study Group Office.

The necessity for reallocating the series found in Part I from WRPA's to NAR basins for framework planning for the NAR stems from a decision to use, in accordance with normal water resources planning practice, areas defined on hydrologic boundaries rather than the WRPA's, which are based on hydrologic and economic considerations, as well as on the boundaries of certain data and projection sets developed for previous water resources studies in the North Atlantic region. The NAR Study Group staff developed the hydrologic boundaries of the various NAR basins, and then these were approximated by using the county boundaries nearest to the true hydrologically defined areas. County boundary approximations were used because counties are generally the smallest units for which necessary data series are available for tasks such as the present reallocation of OBE projections. For the projections and data contained in Part II, all of the areas are defined by county and independent city (in Virginia) boundaries except for Areas 7 and 9.

In the case of these two areas, the boundary line was drawn through Middlesex County to avoid serious distortions in demand estimation. This was necessary because, while geographically the county lies in Area 7, the population and economic activity of the county are largely located in Area 9. Seventy percent of the population and economic activity of the county are allocated to

Area 9 in the reaggregations of this part, and 30% to Area 7. A list of counties and independent cities in each NAR basin is given on pages B-187 to 194 and a map is provided - (Figure B-4).

The disaggregations and reaggregations of data and projections are based upon historical data and WRPA projection aggregates for the benchmark years. Historical data were reallocated to NAR hydrologic areas from WRPA's on the basis of county population and economic series found in the "County and City Data Book," published by the U.S. Bureau of Census, Department of Commerce, in 1967, and "Growth Patterns in Employment by County," Volumes I, II and V, published by the U. S. Office of Business Economics, Department of Commerce, in 1965.

The projection series were reallocated on the basis of the county historical data series just cited and also on the basis of population projections by county by benchmark years for almost the whole of the NAR prepared by the Regional Plan Association.

Historical allocators from 1959-60 can be used to reallocate the projections from WRPA's to NAR basins in some cases without seriously distorting the significance of the WRPA projections. This is possible where little change is expected in the relative growth patterns of the parts of WRPA's allocated to different NAR basins, since in these cases, growth will be approximately proportional in the various parts of the WRPA. The relative importance of the subportions of some WRPA's is expected to change, however, as indicated by the detailed analysis of the RPA Study used to develop their "most likely" population distribution projections. In these cases, the RPA population projections, which reflect expected changing relative growth of different parts of the WRPA's, were used as the basis for reallocating the economic and demographic projection series from the WRPA's to the NAR basins. The RPA study did not cover the very northernmost and southernmost portions of the NAR (Areas 1 and 2, parts of 3, 4 and 5; the New York portion of 11; and part of 21). For these uncovered portions RPA projections were deducted from the WRPA aggregates and the remainders were distributed according to historical allocators.

The economic and demographic projections of Part II have been used by cooperating agencies to project estimates for the demands of water resource system outputs in the NAR at the framework level for the benchmark years. These uses are explained in detail in the separate appendices to the framework study. For the demand or "requirements" model used to project flow demands, the projections given here are only one of many sets used to project alternative future water demands or requirements. For a discussion of the alternative series used, see the relevant material in Appendix T, plan formulation.

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 1
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	104,811	106,064	117,700	137,700	161,400
Total Personal Income (000-$58)	141,811		310,700	642,900	1,361,900
Per Capita Income ($58)	1,353		2,640	4,669	8,438
Per Capita Relative (US=1.00)	.634		.642	.652	.680
Total Earnings (000-$58)*	113,472		233,900	485,200	1,025,000
Per Worker Earnings ($58)	3,321		5,402	9,331	16,559
Per Worker Relative (US=1.00)	.712		.668	.685	.709
Population	104,811	106,064	117,700	137,700	161,400
Total Employment	34,159	34,642	43,300	52,000	61,900
Participation Rate (Empl/Pop)	.326	.327	.368	.378	.384
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		5,217	3,700	2,800	2,100
Mining		4	D	D	D
Manufacturing		4,320	5,700	7,100	8,700
Food + Kindred Products		1,255	1,200	1,200	1,200
Textile Mill Products		0	0	0	0
Chemicals + Allied Products		87	100	200	300
Paper + Allied Products		1,065	1,600	2,100	2,600
Petroleum Refining		22	D	D	D
Primary Metals		4	D	D	D
Armed Forces		6,961	6,200	6,200	6,200
Other		18,140	27,700	35,900	44,900

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 2
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	141,993	143,725	158,700	186,200	219,000
Total Personal Income (000-$58)	242,937		532,800	1,100,500	2,335,300
Per Capita Income ($58)	1,711		3,357	5,910	10,663
Per Capita Relative (US=1.00)	.802		.816	.825	.859
Total Earnings (000-$58)*	194,398		401,200	831,500	1,758,200
Per Worker Earnings ($58)	3,935		6,440	11,131	19,800
Per Worker Relative (US=1.00)	.844		.797	.818	.848
Population	141,993	143,725	158,700	186,200	219,000
Total Employment	49,391	50,090	62,300	74,700	88,800
Participation Rate (Empl/Pop)	.348	.349	.393	.401	.405
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		1,962	1,400	1,100	800
Mining		36	D	D	D
Manufacturing		15,010	19,500	23,500	28,400
Food + Kindred Products		1,060	1,100	1,100	1,100
Textile Mill Products		2,065	1,800	1,700	1,600
Chemicals + Allied Products		59	100	100	200
Paper + Allied Products		4,817	7,100	9,400	11,800
Petroleum Refining		0	0	0	0
Primary Metals		12	D	D	D
Armed Forces		4,174	3,700	3,700	3,700
Other		28,908	37,700	46,400	55,900

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 3
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	146,800	148,968	167,400	188,500	217,100
Total Personal Income (000-$58)	256,215		567,900	1,150,300	2,486,700
Per Capita Income ($58)	1,745		3,392	6,102	11,454
Per Capita Relative (US=1.00)	.818		.825	.852	.923
Total Earnings (000-$58)*	205,118		428,200	881,200	1,877,800
Per Worker Earnings ($58)	3,808		6,488	11,429	20,795
Per Worker Relative (US=1.00)	.816		.803	.839	.890
Population	146,800	148,968	167,400	188,500	217,100
Total Employment	53,870	54,628	66,000	77,100	90,300
Participation Rate (Empl/Pop)	.367	.367	.394	.409	.416
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		3,436	2,400	1,800	1,300
Mining		14	D	D	D
Manufacturing		18,880	19,700	20,200	21,000
Food + Kindred Products		1,718	1,700	1,700	1,600
Textile Mill Products		3,117	2,100	1,500	1,100
Chemicals + Allied Products		53	100	100	200
Paper + Allied Products		4,168	4,400	4,700	5,100
Petroleum Refining		0	0	0	0
Primary Metals		19	D	D	D
Armed Forces		71	100	100	100
Other		32,227	43,800	55,000	67,900

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 4
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	128,970	130,657	143,700	154,600	183,100
Total Personal Income (000-$58)	233,935		518,500	1,050,300	2,270,400
Per Capita Income ($58)	1,814		3,608	6,794	12,399
Per Capita Relative (US=1.00)	.850		.877	.949	.999
Total Earnings (000-$58)*	187,282		391,000	804,600	1,714,500
Per Worker Earnings ($58)	3,738		6,368	11,222	20,411
Per Worker Relative (US=1.00)	.801		.788	.824	.874
Population	128,970	130,657	143,700	154,600	183,100
Total Employment	50,101	50,806	61,400	71,700	84,000
Participation Rate (Empl/Pop)	.388	.389	.427	.464	.459
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		1,850	1,300	1,000	700
Mining		88	D	D	D
Manufacturing		27,092	28,300	29,000	30,100
Food + Kindred Products		1,409	1,400	1,400	1,300
Textile Mill Products		5,975	4,000	2,900	2,100
Chemicals + Allied Products		102	200	200	300
Paper + Allied Products		3,577	3,800	4,100	4,400
Petroleum Refining		0	0	0	0
Primary Metals		141	200	200	200
Armed Forces		168	100	100	100
Other		21,608	31,700	41,600	53,100

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 5
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	155,684	157,698	175,400	204,900	240,000
Total Personal Income (000-$58)	249,335		547,300	1,128,500	2,399,000
Per Capita Income ($58)	1,602		3,120	5,508	9,996
Per Capita Relative (US=1.00)	.751		.759	.769	.805
Total Earnings (000-$58)*	199,526		412,200	853,800	1,806,700
Per Worker Earnings ($58)	3,871		6,342	10,988	19,574
Per Worker Relative (US=1.00)	.830		.785	.807	.838
Population	155,684	157,698	175,400	204,900	240,000
Total Employment	51,547	52,275	65,000	77,700	92,300
Participation Rate (Empl/Pop)	.331	.331	.371	.379	.385
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		5,570	4,000	3,000	2,200
Mining		88	D	D	D
Manufacturing		15,365	19,400	23,200	27,800
Food + Kindred Products		2,418	2,400	2,400	2,400
Textile Mill Products		1,074	1,100	1,000	1,000
Chemicals + Allied Products		608	1,000	1,500	2,200
Paper + Allied Products		1,804	2,500	3,200	3,900
Petroleum Refining		36	D	D	D
Primary Metals		9	D	D	D
Armed Forces		1,062	900	900	900
Other		30,190	40,700	50,600	61,400

D Too small to be projected but included in higher level totals

* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 6
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	450,457	456,810	579,500	734,000	916,600
Total Personal Income (000-$58)	904,041		2,224,700	4,928,400	11,025,900
Per Capita Income ($58)	2,007		3,839	6,714	12,029
Per Capita Relative (US=1.00)	.940		.934	.938	.969
Total Earnings (000-$58)*	726,002		1,628,200	3,479,000	7,566,200
Per Worker Earnings ($58)	4,228		7,411	12,904	23,026
Per Worker Relative (US=1.00)	.906		.917	.948	.986
Population	450,457	456,810	579,500	734,000	916,600
Total Employment	171,705	174,402	219,700	269,600	328,600
Participation Rate (Empl/Pop)	.381	.382	.379	.367	.358
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		5,021	3,300	2,400	1,700
Mining		91	D	D	D
Manufacturing		59,047	64,300	69,500	75,700
Food + Kindred Products		4,389	4,200	4,200	4,200
Textile Mill Products		4,906	3,300	2,500	1,900
Chemicals + Allied Products		306	500	700	1,000
Paper + Allied Products		4,163	4,400	4,600	5,000
Petroleum Refining		69	D	D	D
Primary Metals		661	900	1,000	1,100
Armed Forces		11,308	9,000	9,000	9,000
Other		98,935	143,100	188,700	242,200

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 7
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	1,217,136	1,229,505	1,437,500	1,860,000	2,192,300
Total Personal Income (000-$58)	2,764,673		6,210,900	13,764,700	27,966,700
Per Capita Income ($58)	2,271		4,321	7,400	12,757
Per Capita Relative (US=1.00)	1.064		1.051	1.033	1.027
Total Earnings (000-$58)*	2,235,576		5,124,600	10,857,800	22,987,100
Per Worker Earnings ($58)	4,629		8,177	13,833	23,801
Per Worker Relative (US=1.00)	.992		1.011	1.016	1.019
Population	1,217,136	1,229,505	1,437,500	1,860,000	2,192,300
Total Employment	482,914	490,305	626,700	784,900	965,800
Participation Rate (Empl/Pop)	.397	.399	.436	.422	.441
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		10,822	7,800	6,000	4,500
Mining		618	300	200	200
Manufacturing		205,270	217,800	237,800	259,600
Food + Kindred Products		10,268	8,200	7,300	7,000
Textile Mill Products		21,473	12,400	8,900	6,600
Chemicals + Allied Products		3,268	4,300	5,300	6,400
Paper + Allied Products		9,228	10,300	11,600	12,600
Petroleum Refining		556	200	100	D
Primary Metals		10,290	12,500	14,200	15,700
Armed Forces		5,516	4,400	4,400	4,400
Other		268,079	396,400	536,500	697,100

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 8
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	1,625,312	1,640,414	1,907,600	2,319,600	3,039,300
Total Personal Income (000-$58)	3,669,305		8,368,100	17,280,600	39,244,200
Per Capita Income ($58)	2,258		4,387	7,450	12,912
Per Capita Relative (US=1.00)	1.058		1.067	1.040	1.040
Total Earnings (000-$58)*	2,968,510		6,696,700	14,034,900	29,565,000
Per Worker Earnings ($58)	4,582		8,019	13,413	22,869
Per Worker Relative (US=1.00)	.982		.992	.985	.979
Population	1,625,312	1,640,414	1,907,600	2,319,600	3,089,300
Total Employment	647,793	651,527	835,100	1,046,400	1,292,800
Participation Rate (Empl/Pop)	.399	.397	.438	.451	.425
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		19,182	12,800	9,000	6,200
Mining		577	300	300	200
Manufacturing		262,311	272,700	288,300	307,300
Food + Kindred Products		9,864	9,800	9,600	9,500
Textile Mill Products		12,660	9,200	6,500	4,900
Chemicals + Allied Products		7,668	11,400	16,500	22,900
Paper + Allied Products		18,098	20,100	23,000	26,200
Petroleum Refining		296	200	100	100
Primary Metals		6,820	5,700	4,600	4,400
Armed Forces		10,248	8,000	8,000	8,000
Other		359,209	541,300	740,800	971,100

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 9
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	4,301,468	4,324,527	5,311,400	6,516,700	8,093,800
Total Personal Income (000-$58)	10,005,645		23,269,100	48,846,200	104,244,700
Per Capita Income ($58)	2,326		4,381	7,496	12,880
Per Capita Relative (US=1.00)	1.090		1.070	1.047	1.038
Total Earnings (000-$58)*	8,094,785		18,147,600	37,815,600	78,772,100
Per Worker Earnings ($58)	4,717		8,355	14,095	24,168
Per Worker Relative (US=1.00)	1.011		1.034	1.035	1.035
Population	4,301,468	4,324,527	5,311,400	6,516,700	8,093,800
Total Employment	1,716,085	1,723,669	2,172,000	2,683,000	3,259,400
Participation Rate (Empl/Pop)	.399	.399	.409	.412	.403
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		17,277	13,100	10,500	8,000
Mining		731	500	400	300
Manufacturing		602,851	621,200	666,500	717,200
Food + Kindred Products		44,904	34,900	30,200	27,900
Textile Mill Products		62,155	32,300	21,300	14,600
Chemicals + Allied Products		13,054	16,500	20,000	23,500
Paper + Allied Products		17,404	20,200	23,100	25,700
Petroleum Refining		2,664	1,100	600	300
Primary Metals		16,269	19,700	22,200	24,400
Armed Forces		55,163	43,500	43,500	43,500
Other		1,047,647	1,493,700	1,962,100	2,490,400

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 10
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	1,893,646	1,898,946	2,550,800	3,359,900	4,104,900
Total Personal Income (000-$58)	4,902,677		11,606,700	25,577,800	53,579,500
Per Capita Income ($58)	2,589		4,550	7,613	13,053
Per Capita Relative (US=1.00)	1.213		1.107	1.063	1.052
Total Earnings (000-$58)*	3,974,249		9,029,300	18,958,300	39,929,700
Per Worker Earnings ($58)	5,274		9,173	15,207	25,677
Per Worker Relative (US=1.00)	1.131		1.135	1.117	1.099
Population	1,893,646	1,898,946	2,550,800	3,359,900	4,104,900
Total Employment	753,561	756,721	984,300	1,246,700	1,555,100
Participation Rate (Empl/Pop)	.398	.398	.386	.371	.379
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		13,719	9,800	7,200	5,200
Mining		998	700	600	600
Manufacturing		310,959	321,900	339,500	361,500
Food + Kindred Products		11,874	10,900	10,800	10,700
Textile Mill Products		16,715	11,500	7,900	5,600
Chemicals + Allied Products		10,639	15,700	22,500	30,800
Paper + Allied Products		9,876	13,100	15,800	18,800
Petroleum Refining		900	700	500	400
Primary Metals		22,922	17,800	13,800	12,500
Armed Forces		11,813	9,400	9,400	9,400
Other		419,232	642,500	890,000	1,178,400

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 11
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	508,348	511,654	587,800	676,700	792,600
Total Personal Income (000-$58)	881,021		2,013,700	4,192,000	8,925,500
Per Capita Income ($58)	1,733		3,426	6,195	11,261
Per Capita Relative (US=1.00)	.812		.833	.865	.907
Total Earnings (000-$58)*	721,070		1,541,500	3,196,000	6,775,700
Per Worker Earnings ($58)	4,241		7,330	12,278	21,361
Per Worker Relative (US=1.00)	.909		.907	.902	.914
Population	508,348	511,654	587,800	676,700	792,600
Total Employment	170,041	171,108	210,300	260,300	317,200
Participation Rate (Empl/Pop)	.334	.334	.358	.385	.400
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		19,804	13,700	10,000	7,300
Mining		3,679	2,700	2,500	2,300
Manufacturing		34,567	39,700	46,000	53,200
Food + Kindred Products		3,674	3,300	3,000	2,800
Textile Mill Products		459	300	300	200
Chemicals + Allied Products		758	1,300	1,800	2,600
Paper + Allied Products		4,468	4,600	4,400	4,400
Petroleum Refining		54	D	D	D
Primary Metals		4,347	3,400	2,900	2,600
Armed Forces		6,193	4,700	4,700	4,700
Other		106,865	149,500	197,100	249,700

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 12
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	1,954,958	1,967,032	2,642,800	3,671,700	5,068,300
Total Personal Income (000-$58)	4,229,075		11,822,100	28,630,500	68,625,200
Per Capita Income ($58)	2,163		4,473	7,798	13,540
Per Capita Relative (US=1.00)	1.014		1.088	1.089	1.091
Total Earnings (000-$58)*	3,474,331		8,932,900	20,833,600	49,005,600
Per Worker Earnings ($58)	4,775		8,579	14,523	25,016
Per Worker Relative (US=1.00)	1.024		1.062	1.067	1.071
Population	1,954,958	1,967,032	2,642,800	3,671,700	5,068,300
Total Employment	727,668	731,623	1,041,300	1,434,500	1,959,000
Participation Rate (Empl/Pop)	.372	.372	.394	.391	.387
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		29,927	22,300	17,500	13,700
Mining		1,796	1,500	1,500	1,700
Manufacturing		233,630	263,100	304,400	358,800
Food + Kindred Products		16,532	16,600	17,600	18,900
Textile Mill Products		17,648	14,700	11,900	10,100
Chemicals + Allied Products		11,529	19,000	27,300	39,600
Paper + Allied Products		13,259	13,600	14,600	17,300
Petroleum Refining		515	D	D	D
Primary Metals		8,707	8,600	9,400	11,100
Armed Forces		10,467	14,100	15,400	17,100
Other		455,803	740,300	1,095,700	1,567,700

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 13
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	10,491,524	10,557,830	12,241,400	13,778,200	15,490,000
Total Personal Income (000-$58)	30,135,204		62,968,400	120,365,000	227,010,700
Per Capita Income ($58)	2,872		5,144	8,736	14,655
Per Capita Relative (US=1.00)	1.346		1.251	1.220	1.181
Total Earnings (000-$58)*	24,580,216		50,961,900	95,982,100	182,284,200
Per Worker Earnings ($58)	5,695		9,613	15,930	26,860
Per Worker Relative (US=1.00)	1.221		1.190	1.170	1.150
Population	10,491,524	10,557,830	12,241,400	13,778,200	15,490,000
Total Employment	4,315,770	4,345,600	5,301,100	6,025,400	6,786,400
Participation Rate (Empl/Pop)	.411	.412	.433	.437	.438
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		16,935	10,800	6,800	4,300
Mining		4,441	2,900	2,500	2,000
Manufacturing		1,186,869	1,129,400	1,037,700	987,700
Food + Kindred Products		104,303	89,600	78,900	71,600
Textile Mill Products		48,678	37,500	25,900	18,600
Chemicals + Allied Products		49,084	55,500	54,400	59,700
Paper + Allied Products		32,498	33,300	32,100	33,000
Petroleum Refining		7,909	3,200	1,400	800
Primary Metals		19,962	24,600	25,500	26,300
Armed Forces		21,036	13,400	10,800	9,200
Other		3,116,319	4,144,600	4,967,600	5,783,200

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 14
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	4,083,764	4,118,903	5,192,000	6,720,000	8,427,300
Total Personal Income (000-$58)	11,547,829		26,586,000	58,475,600	122,962,200
Per Capita Income ($58)	2,828		5,121	8,702	14,591
Per Capita Relative (US=1.00)	1.325		1.245	1.215	1.176
Total Earnings (000-$58)*	9,418,567		20,534,100	43,162,000	89,287,600
Per Worker Earnings ($58)	5,748		9,593	15,904	26,829
Per Worker Relative (US=1.00)	1.232		1.187	1.168	1.149
Population	4,083,764	4,118,403	5,192,000	6,720,000	8,427,300
Total Employment	1,638,472	1,649,615	2,140,500	2,713,900	3,328,000
Participation Rate (Empl/Pop)	.401	.401	.412	.404	.395
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		11,921	8,100	5,800	4,100
Mining		2,118	1,500	1,400	1,300
Manufacturing		657,492	679,100	715,400	755,100
Food + Kindred Products		50,328	46,900	47,300	47,500
Textile Mill Products		27,807	23,200	18,400	14,600
Chemicals + Allied Products		76,239	82,400	94,900	109,800
Paper + Allied Products		21,855	24,300	26,900	30,600
Petroleum Refining		14,354	6,200	3,200	1,900
Primary Metals		29,365	39,100	46,300	52,900
Armed Forces		3,533	2,500	2,300	2,200
Other		974,551	1,449,300	1,989,000	2,565,300

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 15
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	6,302,649	6,356,474	7,804,000	9,609,800	11,853,500
Total Personal Income (000-$58)	15,037,272		33,751,000	70,828,100	150,815,200
Per Capita Income ($58)	2,386		4,325	7,370	12,723
Per Capita Relative (US=1.00)	1.118		1.052	1.029	1.025
Total Earnings (000-$58)*	12,276,380		26,845,800	55,826,600	118,410,100
Per Worker Earnings ($58)	4,988		8,511	14,381	24,904
Per Worker Relative (US=1.00)	1.069		1.053	1.056	1.066
Population	6,302,649	6,356,474	7,804,000	9,609,800	11,853,500
Total Employment	2,461,042	2,480,736	3,154,100	3,881,900	4,754,700
Participation Rate (Empl/Pop)	.390	.390	.404	.404	.401
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		52,649	36,100	26,000	18,700
Mining		10,471	3,100	2,100	1,500
Manufacturing		935,749	1,047,100	1,151,400	1,273,500
Food + Kindred Products		78,789	75,100	68,900	64,300
Textile Mill Products		58,836	36,800	25,300	17,900
Chemicals + Allied Products		77,250	121,000	175,000	237,000
Paper + Allied Products		28,926	38,900	47,300	55,900
Petroleum Refining		27,057	18,300	14,300	10,500
Primary Metals		76,893	79,800	80,900	83,700
Armed Forces		55,268	50,100	48,300	47,900
Other		1,426,599	2,017,700	2,654,100	3,413,100

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 16
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	647,233	652,077	1,082,000	1,707,000	2,290,000
Total Personal Income (000-$58)	1,520,243		5,146,700	13,928,300	31,487,000
Per Capita Income ($58)	2,349		4,757	8,160	13,750
Per Capita Relative (US=1.00)	1.101		1.157	1.140	1.108
Total Earnings (000-$58)*	1,241,194		3,624,400	9,955,500	22,659,900
Per Worker Earnings ($58)	5,336		9,185	15,335	26,127
Per Worker Relative (US=1.00)	1.144		1.137	1.126	1.118
Population	647,233	652,077	1,082,000	1,707,000	2,290,000
Total Employment	232,624	234,350	394,600	649,200	867,300
Participation Rate (Empl/Pop)	.359	.359	.365	.380	.379
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		7,951	7,100	6,600	5,100
Mining		210	100	100	100
Manufacturing		34,339	46,900	64,200	73,600
Food + Kindred Products		6,022	7,200	8,900	9,200
Textile Mill Products		1,075	1,100	1,100	900
Chemicals + Allied Products		4,141	7,200	11,400	15,600
Paper + Allied Products		366	500	800	1,000
Petroleum Refining		826	500	400	300
Primary Metals		1,353	2,300	3,500	4,200
Armed Forces		14,290	14,200	17,100	17,200
Other		177,560	326,300	561,200	771,300

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 17
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	3,163,988	3,182,731	3,902,700	4,902,100	6,097,400
Total Personal Income (000-$58)	6,012,608		14,210,100	31,873,200	71,289,600
Per Capita Income ($58)	1,900		3,641	6,502	11,692
Per Capita Relative (US=1.00)	.890		.885	.908	.942
Total Earnings (000-$58)*	4,880,696		11,268,100	24,448,800	53,412,700
Per Worker Earnings ($58)	4,171		7,301	12,543	22,203
Per Worker Relative (US=1.00)	.894		.904	.921	.950
Population	3,163,988	3,182,731	3,902,700	4,902,100	6,097,400
Total Employment	1,170,143	1,177,519	1,543,300	1,949,200	2,405,700
Participation Rate (Empl/Pop)	.370	.370	.395	.398	.395
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		63,427	45,800	33,400	23,900
Mining		21,422	7,600	5,100	3,800
Manufacturing		429,514	529,700	614,700	713,400
Food + Kindred Products		38,537	35,900	34,200	32,400
Textile Mill Products		25,262	19,500	13,800	10,200
Chemicals + Allied Products		10,500	13,000	15,600	18,600
Paper + Allied Products		12,122	14,900	17,500	20,400
Petroleum Refining		694	4,400	5,300	6,100
Primary Metals		24,300	22,800	21,900	21,500
Armed Forces		3,407	3,900	3,900	3,900
Other		659,749	956,300	1,292,100	1,660,700

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 18
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	2,161,762	2,183,937	2,767,300	3,445,300	4,261,300
Total Personal Income (000-$58)	4,695,837		12,264,100	26,105,700	55,012,300
Per Capita Income ($58)	2,172		4,432	7,577	12,910
Per Capita Relative (US=1.00)	1.017		1.078	1.058	1.040
Total Earnings (000-$58)*	3,916,388		9,788,100	20,658,100	43,368,100
Per Worker Earnings ($58)	4,741		8,688	14,365	24,429
Per Worker Relative (US=1.00)	1.016		1.075	1.055	1.046
Population	2,161,762	2,183,937	2,767,300	3,445,300	4,261,300
Total Employment	826,104	834,894	1,126,600	1,438,100	1,775,300
Participation Rate (Empl/Pop)	.382	.382	.407	.417	.417
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		35,459	23,600	16,600	11,600
Mining		893	700	700	700
Manufacturing		247,934	306,500	363,300	425,300
Food + Kindred Products		35,272	34,300	33,500	33,500
Textile Mill Products		3,045	2,000	1,500	1,100
Chemicals + Allied Products		15,300	24,700	36,800	49,900
Paper + Allied Products		6,022	12,000	18,200	26,000
Petroleum Refining		2,203	1,300	800	500
Primary Metals		41,278	48,700	54,600	59,700
Armed Forces		31,552	30,700	31,000	31,200
Other		519,056	765,100	1,026,500	1,306,500

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 19
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	2,951,072	2,971,008	4,433,900	6,337,800	8,626,700
Total Personal Income (000-$58)	6,900,650		21,275,200	51,110,800	118,416,700
Per Capita Income ($58)	2,338		4,798	8,064	13,727
Per Capita Relative (US=1.00)	1.096		1.167	1.126	1.106
Total Earnings (000-$58)*	5,703,299		16,599,100	39,029,900	89,519,700
Per Worker Earnings ($58)	4,844		8,878	14,430	24,170
Per Worker Relative (US=1.00)	1.038		1.099	1.060	1.035
Population	2,951,072	2,971,008	4,433,900	6,337,800	8,626,700
Total Employment	1,177,460	1,185,717	1,869,600	2,704,800	3,703,700
Participation Rate (Empl/Pop)	.399	.399	.422	.427	.429
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		46,028	32,000	23,400	16,700
Mining		3,394	1,800	1,400	1,100
Manufacturing		149,019	201,500	253,900	314,300
Food + Kindred Products		18,659	19,700	20,700	22,100
Textile Mill Products		5,000	3,600	2,600	2,000
Chemicals + Allied Products		13,150	18,800	25,200	32,800
Paper + Allied Products		3,683	5,600	6,900	8,400
Petroleum Refining		483	D	D	D
Primary Metals		1,567	1,600	1,900	2,000
Armed Forces		78,043	74,300	74,300	74,300
Other		909,233	1,560,000	2,351,800	3,297,300

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 20
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	302,999	304,311	381,800	518,100	737,000
Total Personal Income (000-$58)	484,101		1,545,900	3,676,800	9,144,700
Per Capita Income ($58)	1,598		4,049	7,097	12,408
Per Capita Relative (US=1.00)	.749		.985	.991	1.000
Total Earnings (000-$58)*	407,662		1,084,700	2,390,700	5,489,500
Per Worker Earnings ($58)	3,380		7,952	13,393	23,143
Per Worker Relative (US=1.00)	.725		.984	.984	.991
Population	302,999	304,311	381,800	518,100	737,000
Total Employment	120,595	121,159	136,400	178,400	237,200
Participation Rate (Empl/Pop)	.398	.398	.357	.345	.322
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		11,435	7,400	5,500	4,100
Mining		126	D	D	D
Manufacturing		25,581	30,000	36,700	46,300
Food + Kindred Products		2,998	2,900	3,000	3,100
Textile Mill Products		592	500	500	500
Chemicals + Allied Products		2,307	3,000	3,900	5,300
Paper + Allied Products		1,082	1,600	2,400	3,500
Petroleum Refining		353	300	300	200
Primary Metals		302	200	300	300
Armed Forces		9,136	9,800	9,700	9,500
Other		74,881	89,200	126,700	177,300

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-6

NORTH ATLANTIC HYDROLOGIC AREA 21
POPULATION, PERSONAL INCOME, EARNINGS AND EMPLOYMENT
HISTORICAL AND PROJECTED FOR SELECTED YEARS
1959-2020

	1959	1960	1980	2000	2020
Population	1,572,880	1,579,197	2,057,500	2,583,600	3,198,500
Total Personal Income (000-$58)	2,995,787		7,786,700	17,297,500	37,748,100
Per Capita Income ($58)	1,905		3,785	6,695	11,802
Per Capita Relative (US=1.00)	.893		.920	.935	.951
Total Earnings (000-$58)*	2,523,486		6,478,000	13,953,800	30,262,700
Per Worker Earnings ($58)	4,079		7,585	12,924	22,633
Per Worker Relative (US=1.00)	.874		.939	.949	.969
Population	1,572,880	1,579,197	2,057,500	2,583,600	3,198,500
Total Employment	618,693	621,149	854,000	1,079,700	1,337,100
Participation Rate (Empl/Pop)	.393	.393	.415	.418	.418
Employment by Selected Industries					
Agriculture + Forestry + Fisheries		20,757	13,700	9,300	6,300
Mining		1,242	600	500	500
Manufacturing		127,264	160,500	188,900	219,400
Food + Kindred Products		14,287	14,800	14,400	13,800
Textile Mill Products		5,578	5,300	4,700	4,200
Chemicals + Allied Products		12,487	18,500	25,600	33,500
Paper + Allied Products		8,463	11,700	14,700	18,200
Petroleum Refining		343	100	100	100
Primary Metals		5,896	7,500	8,900	10,100
Armed Forces		84,907	94,500	94,600	94,800
Other		386,979	584,700	786,400	1,016,100

D Too small to be projected but included in higher level totals
* Including Armed Forces pay

TABLE B-7

NAR HYDROLOGIC AREAS SUBDIVIDED BY COUNTIES
WITH WRPA NUMBER IN WHICH COUNTY IS LOCATED

NAR HYDROLOGIC AREA		COUNTY	STATE	WRPA
1.	St. John River, Me.	Aroostook	Maine	1
2.	Penobscot River, Me.	Penobscot	Maine	1
		Piscataquis	Maine	2
3.	Kennebec River, Me.	Franklin	Maine	2
		Kennebec	Maine	2
		Somerset	Maine	2
4.	Androscoggin River, Me. and N. H.	Androscoggin	Maine	2
		Oxford	Maine	2
5.	St. Croix River, Me. and Atlantic Coastal Area from the International Boundary to Cape Small, Me.	Hancock	Maine	1
		Knox	Maine	1
		Lincoln	Maine	1
		Sagadahoc	Maine	2
		Waldo	Maine	1
		Washington	Maine	1
6.	Presumpscot River, Me.; Saco River, Me. and N.H.; Piscataqua River, N.H. and Me.; and Atlantic Coastal Area from Cape Small, Me. to N.H. - Mass. State Line.	Cumberland	Maine	2
		York	Maine	2
		Carroll	New Hampshire	3
		Rockingham	New Hampshire	3
		Strafford	New Hampshire	3
7.	Merrimack River, N.H. and Mass.	Belknap	New Hampshire	3
		Hillsboro	New Hampshire	3
		Merrimack	New Hampshire	3
		*Middlesex (30%)	Mass.	6
		Worcester	Mass.	6
8.	Connecticut River, Vt., N.H., Mass. and Conn.	Cheshire	New Hampshire	4
		Coos	New Hampshire	4
		Grafton	New Hampshire	4
		Sullivan	New Hampshire	4

* Geographically, Middlesex county, Mass. lies in Area 7. However, population and economic activity are largely located in Area 9. (See Introduction, page B-165)

TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
8. Connecticut River, Vt., N.H., Mass. and Conn. (Cont'd)	Caledonia	Vermont	4
	Essex	Vermont	4
	Orange	Vermont	4
	Windham	Vermont	4
	Windsor	Vermont	4
	Franklin	Massachusetts	7
	Hampden	Massachusetts	7
	Hampshire	Massachusetts	7
	Hartford	Connecticut	7
	Middlesex	Connecticut	7
9. Narragansett Bay Drainage, Mass. and R.I.; Pawcatuck River, R.I., and Conn.; and Atlantic Coastal Area from N.H. - Mass. State Line to R.I. - Conn. State Line	Barnstable	Massachusetts	6
	Bristol	Massachusetts	6
	Dukes	Massachusetts	6
	Essex	Massachusetts	6
	*Middlesex (70%)	Massachusetts	6
	Nantucket	Massachusetts	6
	Norfolk	Massachusetts	6
	Plymouth	Massachusetts	6
	Suffolk	Massachusetts	6
	Bristol	Rhode Island	6
	Kent	Rhode Island	6
	Newport	Rhode Island	6
	Providence	Rhode Island	6
	Washington	Rhode Islan6	
10. Thames River, Conn., Mass. and R.I.; Housatonic River, Conn., Mass. and N.Y.; and Conn. Coastal Area.	Berkshire	Massachusetts	7
	Fairfield	Connecticut	7
	Litchfield	Connecticut	7
	New Haven	Connecticut	7
	New London	Connecticut	7
	Tolland	Connecticut	7
	Windham	Connecticut	7
11. St. Lawrence River, N.Y. and Lake Champlain, Vt. and N.Y.	Addison	Vermont	5
	Chittenden	Vermont	5
	Franklin	Vermont	5
	Grand Isle	Vermont	5
	Lamoille	Vermont	5
	Orleans	Vermont	5
	Rutland	Vermont	5
	Washington	Vermont	5
	Clinton	New York	8
	Essex	New York	8
	Franklin	New York	8
	St. Lawrence	New York	8

* Geographically, Middlesex County, Mass., lies in Area 7. However, population and economic activity are largely located in Area 9. (See Introduction, page B-165)

TABLE B-7

NAR HYDROLOGIC AREA		COUNTY	STATE	WRPA
12.	Hudson River, N.Y., Vt. and Mass.	Bennington	Vermont	5
		Albany	New York	9
		Columbia	New York	9
		Dutchess	New York	14
		Fulton	New York	9
		Greene	New York	9
		Hamilton	New York	9
		Herkimer	New York	10
		Montgomery	New York	9
		Oneida	New York	10
		Orange	New York	14
		Putnam	New York	14
		Rensselaer	New York	9
		Rockland	New York	14
		Saratoga	New York	9
		Schenectady	New York	9
		Schoharie	New York	9
		Ulster	New York	13
		Warren	New York	9
		Washington	New York	9
13.	New York City, Long Island and Westchester County Coastal Area	Bronx	New York	14
		Kings	New York	14
		Nassau	New York	14
		New York	New York	14
		Queens	New York	14
		Richmond	New York	14
		Suffolk	New York	14
		Westchester	New York	14
14.	Passaic River, N.J. and N.Y.; Raritan River, N.J.; and other Northern N.J. Streams	Bergen	New Jersey	14
		Essex	New Jersey	14
		Hudson	New Jersey	14
		Hunterdon	New Jersey	13
		Middlesex	New Jersey	14
		Morris	New Jersey	14
		Passaic	New Jersey	14
		Somerset	New Jersey	14
		Union	New Jersey	14
15.	Delaware River and Delaware Bay, N.Y., N.J., Pa. and Del.	Delaware	New York	12
		Sullivan	New York	13
		Burlington	New Jersey	17
		Camden	New Jersey	17
		Cumberland	New Jersey	17

TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
15. Delaware River and Delaware Bay, N.Y., N.J., Pa. and Del. (Cont'd)	Gloucester	New Jersey	17
	Mercer	New Jersey	17
	Salem	New Jersey	17
	Sussex	New Jersey	13
	Warren	New Jersey	13
	Berks	Pennsylvania	13
	Bucks	Pennsylvania	17
	Carbon	Pennsylvania	13
	Chester	Pennsylvania	17
	Delaware	Pennsylvania	17
	Lehigh	Pennsylvania	13
	Monroe	Pennsylvania	13
	Montgomery	Pennsylvania	17
	Northampton	Pennsylvania	13
	Philadelphia	Pennsylvania	17
	Pike	Pennsylvania	13
	Schuylkill	Pennsylvania	13
	Wayne	Pennsylvania	16
	Kent	Delaware	17
	New Castle	Delaware	17
16. Atlantic Coastal Area from Sandy Hook, N.J. to Cape May, N.J.	Atlantic	New Jersey	17
	Cape May	New Jersey	17
	Monmouth	New Jersey	14
	Ocean	New Jersey	17
17. Susquehanna River, N.Y., Pa. and Md.	Broome	New York	12
	Chemung	New York	12
	Chenango	New York	12
	Cortland	New York	12
	*Madison	New York	10
	Otsego	New York	12
	Steuben	New York	12
	Tioga	New York	12
	Bedford	Pennsylvania	16
	Blair	Pennsylvania	16
	Bradford	Pennsylvania	12
	Cameron	Pennsylvania	15
	Centre	Pennsylvania	15
	Clearfield	Pennsylvania	15
	Clinton	Pennsylvania	15
	Columbia	Pennsylvania	16
	Cumberland	Pennsylvania	16
	Dauphin	Pennsylvania	16

* Madison, N. Y., was not included by OBE in their North Atlantic Hydrologic Region for reason given on Page B-51 of Part I of the Final Draft of Appendix B, May 1968.

TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
17. Susquehanna River, N.Y., Pa. and Md. (Cont'd)	Huntingdon	Pennsylvania	16
	Juniata	Pennsylvania	16
	Lackawanna	Pennsylvania	16
	Lancaster	Pennsylvania	16
	Lebanon	Pennsylvania	16
	Luzerne	Pennsylvania	16
	Lycoming	Pennsylvania	15
	Mifflin	Pennsylvania	16
	Montour	Pennsylvania	16
	Northumberland	Pennsylvania	16
	Perry	Pennsylvania	16
	Potter	Pennsylvania	12
	Snyder	Pennsylvania	16
	Sullivan	Pennsylvania	15
	Susquehanna	Pennsylvania	12
	Tioga	Pennsylvania	12
	Union	Pennsylvania	15
	Wyoming	Pennsylvania	16
	York	Pennsylvania	16
18. Patuxent River, Md.; Nanticoke River, Md. and Del.; Delmarva Peninsula from Cape Henlopen, Del., to Cape Charles, Va.; and Chesapeake Bay Drainage from Cape Charles, Va. to Point Lookout, Md.	Sussex	Delaware	17
	Anne Arundel	Maryland	18
	Baltimore	Maryland	18
	Baltimore City	Maryland	*
	Calvert	Maryland	19
	Caroline	Maryland	18
	Carroll	Maryland	18
	Cecil	Maryland	17
	Dorchester	Maryland	18
	Harford	Maryland	18
	Howard	Maryland	18
	Kent	Maryland	18
	Queen Annes	Maryland	18
	Somerset	Maryland	18
	Talbot	Maryland	18
	Wicomico	Maryland	18
	Worcester	Maryland	18
	Accomac	Virginia	23
	Northampton	Virginia	23

* Baltimore City County is combined with Baltimore County by OBE in their WRPA listing.

TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
19. Potomac River, Md., Va., West Va., Pa. and D. C.	Adams	Pennsylvania	16
	Franklin	Pennsylvania	19
	Fulton	Pennsylvania	19
	Allegany	Maryland	19
	Charles	Maryland	19
	Frederick	Maryland	19
	Garrett	Maryland	19
	Montgomery	Maryland	19
	Prince Georges	Maryland	19
	St. Marys	Maryland	19
	Washington	Maryland	19
	Berkeley	West Virginia	19
	Grant	West Virginia	19
	Hampshire	West Virginia	19
	Hardy	West Virginia	19
	Jefferson	West Virginia	19
	Mineral	West Virginia	19
	Morgan	West Virginia	19
	Pendleton	West Virginia	19
	*Alexandria	Virginia	19
	Arlington	Virginia	19
	Augusta	Virginia	20
	Clarke	Virginia	20
	Fairfax	Virginia	19
	*Falls Church	Virginia	19
	Fauquier	Virginia	19
	Frederick	Virginia	20
	*Harrisonburg	Virginia	20
	King George	Virginia	19
	Loudon	Virginia	19
	Page	Virginia	20
	Prince William	Virginia	19
	Rockingham	Virginia	20
	Shenandoah	Virginia	20
	Stafford	Virginia	19
	*Staunton	Virginia	20
	Warren	Virginia	20
	*Waynesboro	Virginia	20
	Westmoreland	Virginia	22
	*Winchester	Virginia	20
	The District	District of Columbia	19

* Independent cities.

TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
20. Rappahannock River, Va.; York River, Va.; and Chesapeake Bay Drainage from Smith Point, Va. to Old Point Comfort, Va.	Caroline	Virginia	22
	Culpeper	Virginia	19
	Essex	Virginia	22
	*Fredericksburg	Virginia	19
	Gloucester	Virginia	23
	*Hampton	Virginia	23
	Hanover	Virginia	22
	King & Queen	Virginia	22
	King William	Virginia	22
	Lancaster	Virginia	22
	Louisa	Virginia	22
	Madison	Virginia	22
	Mathews	Virginia	23
	Middlesex	Virginia	23
	Northumberland	Virginia	22
	Orange	Virginia	22
	Rappahannock	Virginia	19
	Richmond	Virginia	22
	Spotsylvania	Virginia	19
	York	Virginia	23
21. James River, Va. and West Va.; and Chesapeake Bay and Atlantic Coastal Drainage from Old Point Comfort, Va. to Virginia Beach, Va.	Albermarle	Virginia	22
	Alleghany	Virginia	21
	Amelia	Virginia	22
	Amherst	Virginia	21
	Appomattox	Virginia	21
	Bath	Virginia	20
	Botetourt	Virginia	21
	Buckingham	Virginia	21
	*Buena Vista	Virginia	21
	Charles City	Virginia	22
	*Charlottesville	Virginia	22
	*Chesapeake	Virginia	**
	Chesterfield	Virginia	22
	*Clifton Forge	Virginia	21
	*Colonial Heights	Virginia	22
	*Covington	Virginia	21
	Craig	Virginia	21
	Cumberland	Virginia	21
	Fluvanna	Virginia	22
	Goochland	Virginia	22
	Greene	Virginia	22
	Henrico	Virginia	22

* Independent city.

** Norfolk County, Va. and South Norfolk Independent City have combined to form Chesapeake Independent City. OBE lists these instead of Chesapeake Independent City.

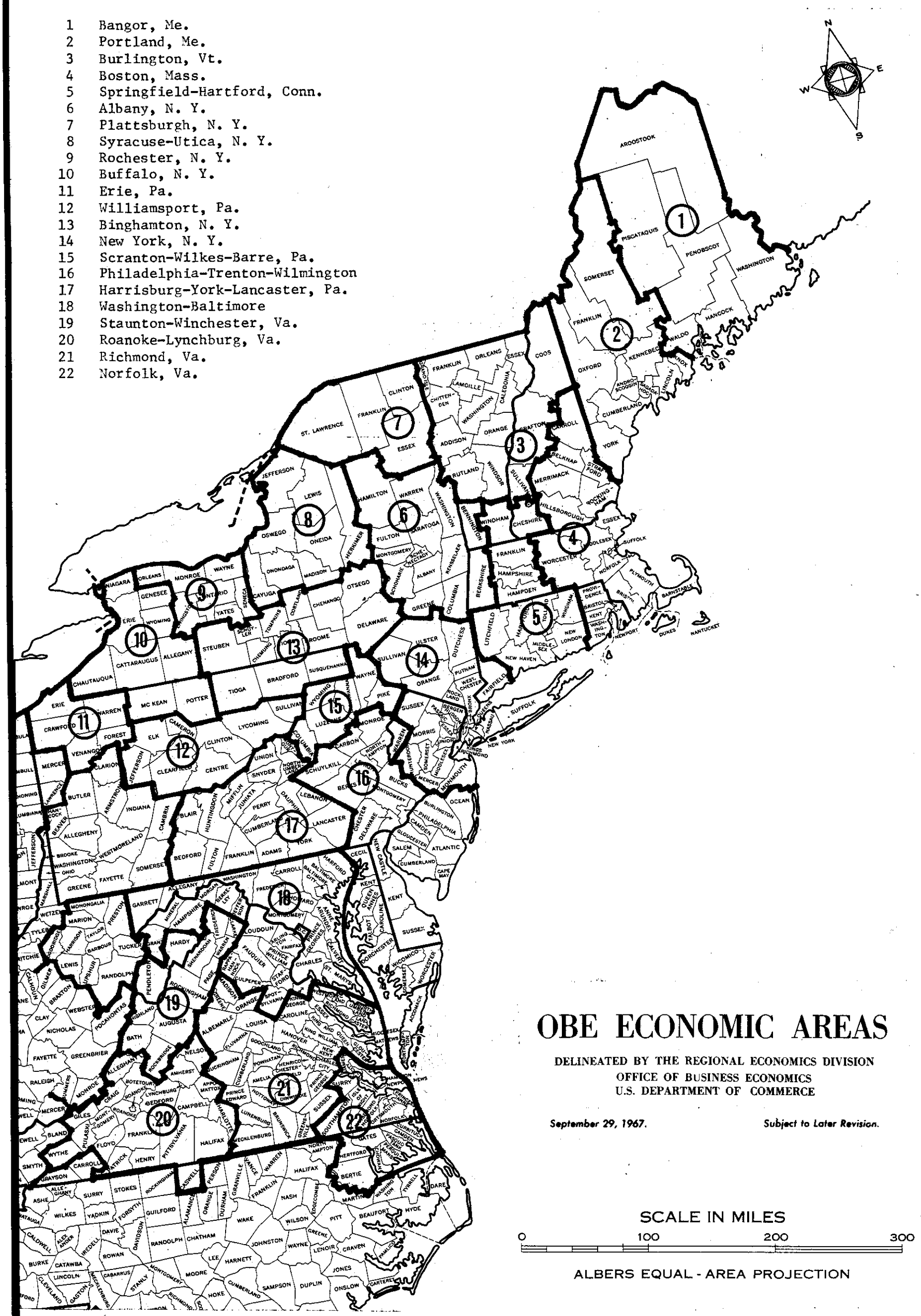
TABLE B-7

NAR HYDROLOGIC AREA	COUNTY	STATE	WRPA
21. James River, Va. and West Va.; and Chesapeake Bay and Atlantic Coastal Drainage from Old Point Comfort, Va. (Cont'd)	Highland	Virginia	20
	*Hopewell	Virginia	22
	Isle of Wight	Virginia	23
	James City	Virginia	23
	*Lexington	Virginia	**
	Lynchburg	Virginia	21
	Nelson	Virginia	21
	New Kent	Virginia	22
	*Newport News	Virginia	23
	*Norfolk	Virginia	23
	Nottoway	Virginia	22
	*Petersburg	Virginia	22
	*Portsmouth	Virginia	23
	Powhatan	Virginia	22
	Prince Edward	Virginia	21
	Prince George	Virginia	22
	*Richmond	Virginia	22
	Rockbridge	Virginia	21
	*Suffolk	Virginia	23
	Surry	Virginia	23
	*Virginia Beach	Virginia	23
	*Williamsburg	Virginia	23

* Independent city.

** Lexington Independent City has been annexed to Rockbridge County. OBE includes Lexington Independent City under Rockbridge County.

1 Bangor, Me.
2 Portland, Me.
3 Burlington, Vt.
4 Boston, Mass.
5 Springfield-Hartford, Conn.
6 Albany, N. Y.
7 Plattsburgh, N. Y.
8 Syracuse-Utica, N. Y.
9 Rochester, N. Y.
10 Buffalo, N. Y.
11 Erie, Pa.
12 Williamsport, Pa.
13 Binghamton, N. Y.
14 New York, N. Y.
15 Scranton-Wilkes-Barre, Pa.
16 Philadelphia-Trenton-Wilmington
17 Harrisburg-York-Lancaster, Pa.
18 Washington-Baltimore
19 Staunton-Winchester, Va.
20 Roanoke-Lynchburg, Va.
21 Richmond, Va.
22 Norfolk, Va.



OBE ECONOMIC AREAS

DELINEATED BY THE REGIONAL ECONOMICS DIVISION
OFFICE OF BUSINESS ECONOMICS
U.S. DEPARTMENT OF COMMERCE

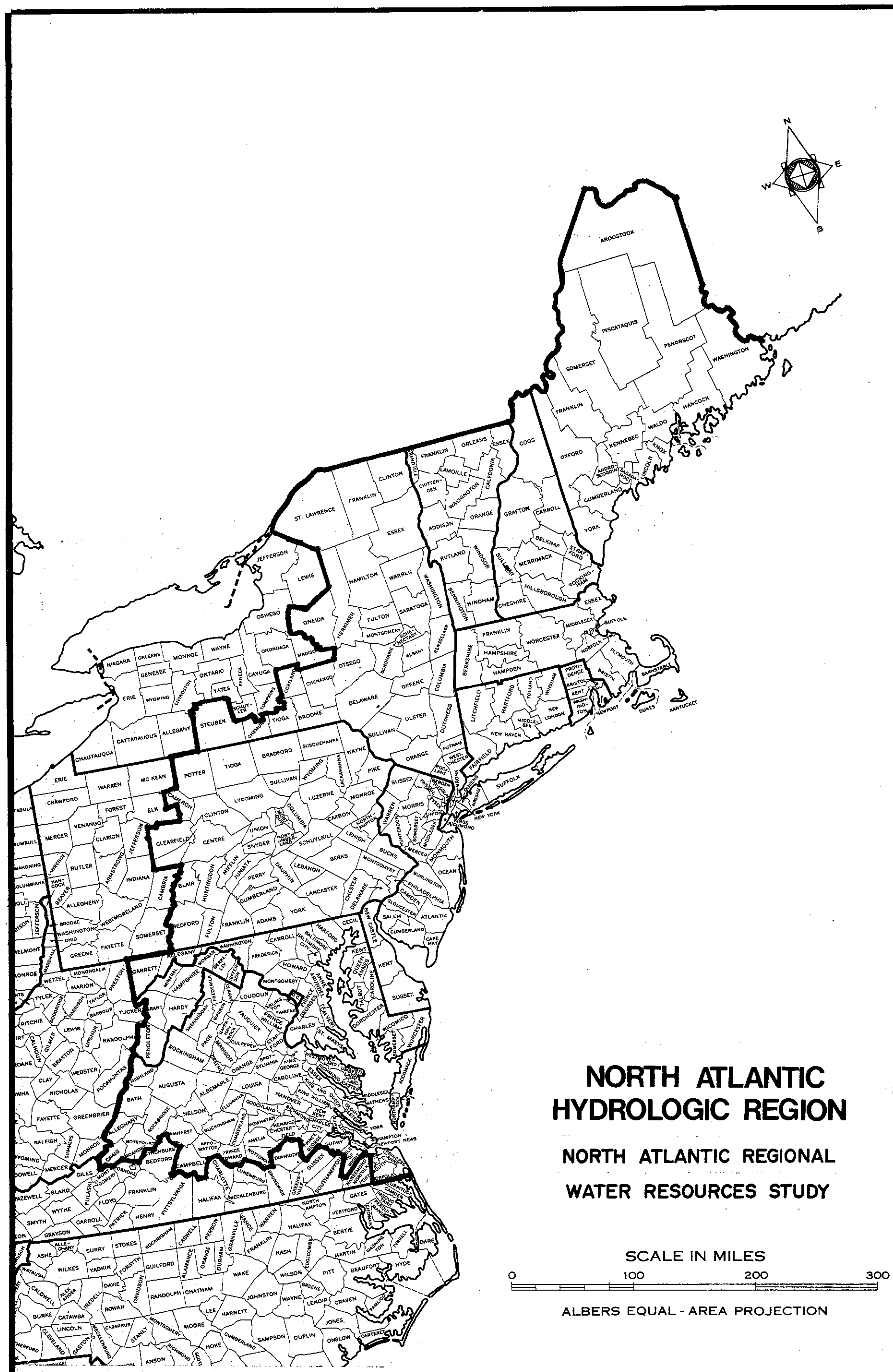
September 29, 1967. *Subject to Later Revision.*

SCALE IN MILES

0 100 200 300

ALBERS EQUAL - AREA PROJECTION

FIGURE B-1



NORTH ATLANTIC HYDROLOGIC REGION

NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY

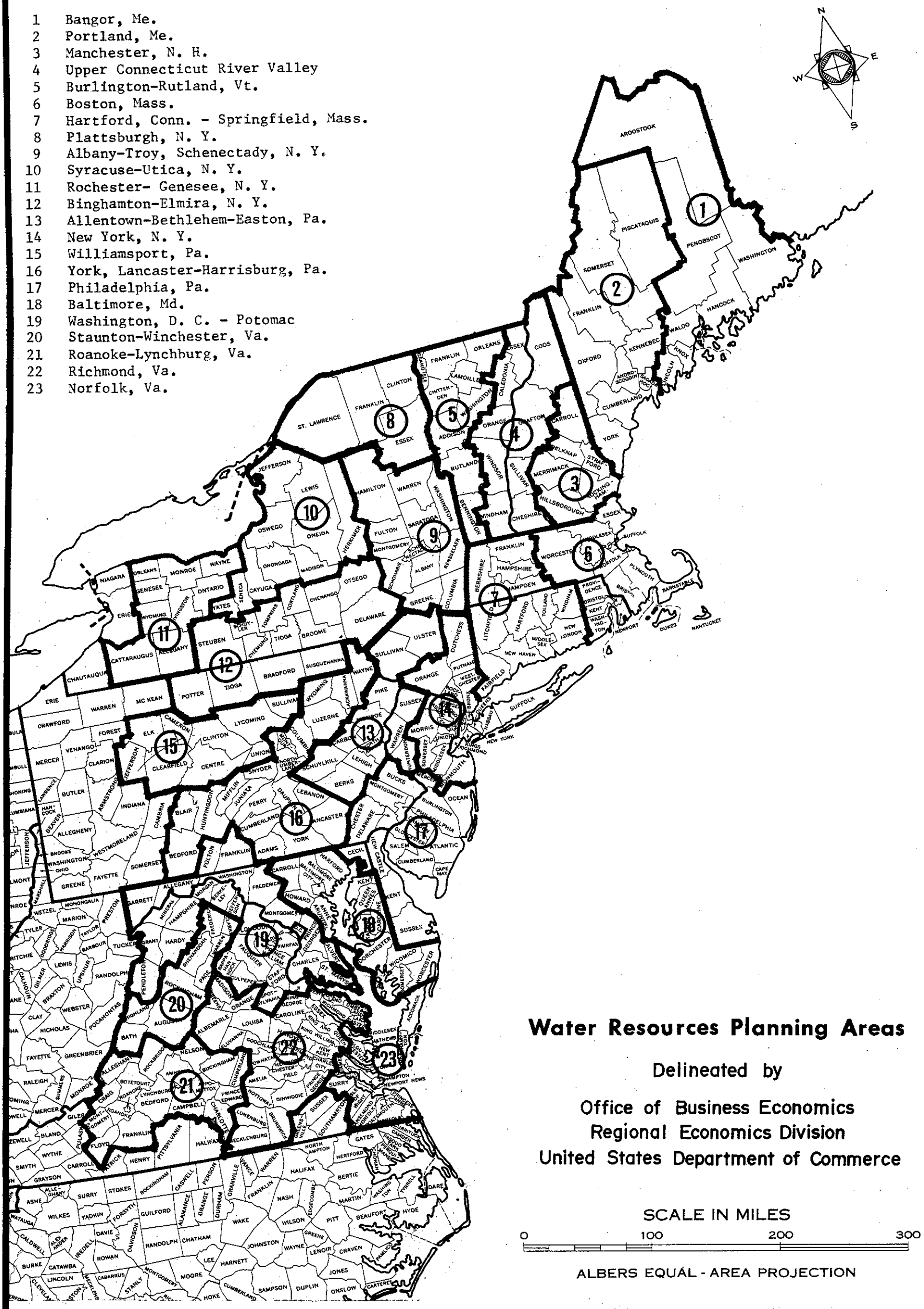
SCALE IN MILES

0 100 200 300

ALBERS EQUAL - AREA PROJECTION

FIGURE B-2

1 Bangor, Me.
2 Portland, Me.
3 Manchester, N. H.
4 Upper Connecticut River Valley
5 Burlington-Rutland, Vt.
6 Boston, Mass.
7 Hartford, Conn. - Springfield, Mass.
8 Plattsburgh, N. Y.
9 Albany-Troy, Schenectady, N. Y.
10 Syracuse-Utica, N. Y.
11 Rochester- Genesee, N. Y.
12 Binghamton-Elmira, N. Y.
13 Allentown-Bethlehem-Easton, Pa.
14 New York, N. Y.
15 Williamsport, Pa.
16 York, Lancaster-Harrisburg, Pa.
17 Philadelphia, Pa.
18 Baltimore, Md.
19 Washington, D. C. - Potomac
20 Staunton-Winchester, Va.
21 Roanoke-Lynchburg, Va.
22 Richmond, Va.
23 Norfolk, Va.



Water Resources Planning Areas

Delineated by

Office of Business Economics
Regional Economics Division
United States Department of Commerce

SCALE IN MILES

0 100 200 300

ALBERS EQUAL - AREA PROJECTION

FIGURE B-3

BASIN OR AREA
1. ST. JOHN RIVER, MAINE.
2. PENOBSCOT RIVER, MAINE.
3. KENNEBEC RIVER, MAINE.
4. ANDROSCOGGIN RIVER, MAINE AND NEW HAMPSHIRE.
5. ST. CROIX RIVER, MAINE; AND ATLANTIC COASTAL AREA FROM THE INTERNATIONAL BOUNDARY TO CAPE SMALL, MAINE.
6. PRESUMPSCOT RIVER, MAINE; SACO RIVER, MAINE AND NEW HAMPSHIRE; PISCATAQUA RIVER, NEW HAMPSHIRE AND MAINE; AND ATLANTIC COASTAL AREA FROM CAPE SMALL, MAINE TO NEW HAMPSHIRE-MASSACHUSETTS STATE LINE.
7. MERRIMACK RIVER, NEW HAMPSHIRE AND MASSACHUSETTS.
8. CONNECTICUT RIVER, VERMONT, NEW HAMPSHIRE, MASSACHUSETTS AND CONNECTICUT.
9. NARRAGANSETT BAY DRAINAGE, MASSACHUSETTS AND RHODE ISLAND; PAWCATUCK RIVER, RHODE ISLAND AND CONNECTICUT; AND ATLANTIC COASTAL AREA FROM NEW HAMPSHIRE-MASSACHUSETTS STATE LINE TO RHODE ISLAND-CONNECTICUT STATE LINE.
10. THAMES RIVER, CONNECTICUT, MASSACHUSETTS AND RHODE ISLAND; HOUSATONIC RIVER, CONNECTICUT, MASSACHUSETTS AND NEW YORK; AND CONNECTICUT COASTAL AREA.
11. ST. LAWRENCE RIVER, NEW YORK; AND LAKE CHAMPLAIN, VERMONT AND NEW YORK.
12. HUDSON RIVER, NEW YORK, VERMONT AND MASSACHUSETTS.
13. NEW YORK CITY; LONG ISLAND; AND WESTCHESTER COUNTY COASTAL AREA.
14. PASSAIC RIVER, NEW JERSEY AND NEW YORK; RARITAN RIVER, NEW JERSEY; AND OTHER NORTHERN NEW JERSEY STREAMS.
15. DELAWARE RIVER AND DELAWARE BAY, NEW YORK, NEW JERSEY, PENNSYLVANIA AND DELAWARE.
16. ATLANTIC COASTAL AREA FROM SANDY HOOK, NEW JERSEY TO CAPE MAY, NEW JERSEY.
17. SUSQUEHANNA RIVER, NEW YORK, PENNSYLVANIA AND MARYLAND.
18. PATUXENT RIVER, MARYLAND; NANTICOKE RIVER, MARYLAND AND DELAWARE; DELMARVA PENINSULA FROM CAPE HENLOPEN, DELAWARE TO CAPE CHARLES, VIRGINIA; AND CHESAPEAKE BAY DRAINAGE FROM CAPE CHARLES, VIRGINIA TO POINT LOOKOUT, MARYLAND.
19. POTOMAC RIVER, MARYLAND, VIRGINIA, WEST VIRGINIA, PENNSYLVANIA AND DISTRICT OF COLUMBIA.
20. RAPPAHANNOCK RIVER, VIRGINIA; YORK RIVER, VIRGINIA; AND CHESAPEAKE BAY DRAINAGE FROM SMITH POINT, VIRGINIA TO OLD POINT COMFORT, VIRGINIA.
21. JAMES RIVER, VIRGINIA AND WEST VIRGINIA; AND CHESAPEAKE BAY AND ATLANTIC COASTAL DRAINAGE FROM OLD POINT COMFORT, VIRGINIA TO VIRGINIA BEACH, VIRGINIA.

NOTE:

PORTIONS OF THE ECONOMIC ACTIVITY AND POPULATION OF MIDDLESEX COUNTY, MASSACHUSETTS, IN AREA 7 HAVE BEEN ALLOCATED TO AREA 9 FOR PLANNING PURPOSES. (SEE PAGE B-165)

NORTH ATLANTIC HYDROLOGIC REGION

NORTH ATLANTIC REGIONAL WATER RESOURCES STUDY

SCALE IN MILES

0 100 200 300

ALBERS EQUAL - AREA PROJECTION

FIGURE B-4